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By Tim MacWelch | Illustrations by Sarah Watanabe-Rocco

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HIGHLIGHTS

Black Diamond Apollo



Looking like it just landed on the surface of the moon, the aptly named Apollo spews out 80 lumens of bright ambient light on its highest setting and is adjustable down to 10 lumens on its lowest setting. Because its globe is frosted, its LED light is soft and easy on the eyes. In

its compact form, the Apollo feels robust enough to take more than a few jolts and is easily packed away until it is needed. It deploys by extending its frosted section above its body, which in turn reveals the power button. The lantern sits on three rubber-tipped legs that fold down from the sides of its body. The extra height gained provides a wider area of light dispersion. At top are hooked loops that allow the Apollo to be hung.

Pros: Compact size, lightweight, ease of use

Cons: Cannot be activated in its compact form

Kelty Flashback Mini



In its compact form, the Flashback Mini acts as a flashlight. When fully deployed from its telescoping aluminum body, it's a lantern capable of lighting up an area about 15 feet in any direction. It is capped on either side with rubberized plastic ABS ends, which further adds to its durability. Its top cap includes a steel D-ring so that the lantern can be hung up. Its Cree LED is powered by four AAA batteries and features a digital locking switch, which keeps itself from turning on when stuffed into your pack. When the switch is activated, each press rotates it through high, medium, low, and strobe modes.

Pros: Two lights in one, solid build, weather resistant

Cons: Top D-ring can be hard to pull out

Streamlight The Siege



The Siege is hardcore. It's rated IPX7, meaning that it's waterproof to 1 meter and is impact resistant up to 2 meters. It also floats in water and has a rubber molded cap, body, and base for enhanced grip. Its provides 360 degrees of soft light

that illuminates a large area and can go as long as 12 days on its low setting with just three D alkaline batteries. Its recessed switch activates the lantern's white LED from a high 340-lumen mode down to 33 lumens in low mode. It also has a 10-lumen red LED mode for preserving night vision and a flashing red SOS mode for emergency signaling that runs an impressive 430 hours (that's almost 18 days straight!). The Siege can be hung from its top or bottom hooks and has a stowable carry handle.

Pros: Robust build, long runtime, brightness

Cons: Weight for its size

Goal Zero Lighthouse 250 Lantern



Packed full of features, the Lighthouse 250 Lantern can be charged via a wall outlet, a built-in hand crank, or even with an optional Goal Zero solar panel. Its two Cree LEDs can be activated one at a time or

together. Single LED provides directional lighting and a longer runtime while dual LEDs provide brighter, unidirectional lighting. Unlike the others in this guide, the Lighthouse 250 includes a USB port that lets you charge other devices and has the capability of keeping itself charged (with your help) via its hand crank. One minute of cranking provides about 10 minutes of light. The dial switch on its face varies how bright the light output is and a small emergency button activates flashing red signal lights on the lantern's cap.

Pros: Integral hand crank for charging, USB port to charge other devices

Cons: Does not accept disposable batteries

Coast EAL20



The Coast EAL20 LED Lantern is equipped with nine LEDs (one white and eight red) which provide approximately 375 lumens of bright light on its highest setting or 80 hours of runtime on its lowest power saving setting with four D batteries. Lantern lighting options include white variable area light and

flashing red or solid red options. Its power push button is separate from its dial dimming switch so you can choose how bright you want the light to be before you turn it on. The EAL20 also has a battery-life indicator and handle to allow for hanging or carrying.

Pros: Brightness selection dial is independent from the power button

Cons: Heavy weight

Coleman CPX6 Triago Lantern



The Triago illuminates a wide swath of area at 450 lumens on its high setting for up to 13 hours. But the real highlight here is that the lantern can split into three independent panels complete with individual

constant on/off switches that toggle between high and low modes. On high mode the panels have a throw of almost 20 feet. Use them together as a wide area lantern or pop one or more off to use as personal lanterns. It's ideal to keep at home or in a vehicle in case of power outages and other emergencies. Four D batteries or a proprietary Coleman rechargeable battery cartridge powers the lantern and its panels. Each rechargeable panel runs for as much as seven hours when removed from the charging base.

Pros: Flexibility, brightness, rugged build

Cons: Size, weight, price



Streamlight The Siege

Coyote

High 340 / Mid 175 / Low 33 / Red 10 / S.O.S. 10

High 30 hr. / Mid 70 hr. / Low 295 hr. / Red 235 hr. / S.O.S. 430 hr.

3.75 in.

7.25 in.

1 lbs 14.8 oz.

D (three, not included)

Constant-on push-button switch

\$61

www.streamlight.com

Goal Zero Lighthouse 250 Lantern

Black

High 250 / Variable

High 2.5 hr. / Low 48 hr.

4.5 in.

6.25 in.

1 lbs 3.5 oz.

Rechargeable Li-NMC (included)

Rotary dial switch, emergency signal push button

\$80

www.goalzero.com

**MAKE & MODEL****COLORWAY****LUMEN OUTPUT****RUNTIME****OVERALL WIDTH****OVERALL HEIGHT****WEIGHT WITH BATTERY****BATTERY TYPE****CONTROLS****MSRP****URL****Coast EAL20**

Black and yellow

High 375 / Variable

Low 100 hr.

5.5 in.

8.25 in.

2 lbs 4.5 oz.

D (four, not included)

Constant-on push button, variable output selection dial

\$54

www.coastportland.com**Coleman CPX6 Triago Lantern**

Black and red

High 450 (lantern) / High 150 (panel)

Low 300 hr. (lantern) / Low 7 hr. (panel)

6 in.

10.75 in.

4 lbs 5.2 oz.

D (four, not included), rechargeable cartridge (sold separately)

Constant push-button switch on lantern base and on each panel

\$120

www.coleman.com

5 MAKE & MODEL
OGIO
Endurance 9.0 Athletic Bag

DIMENSIONS
13 H x 27 W x 12.5 in. D

MSRP
\$150

URL
www.ogio.com

NOTES
While many of the models featured in our off-the-shelf go-bag buyer's guide on page 98 come packed with supplies and features, some of them are pretty obvious about that fact. That could spell bad news in a lawless situation if you're surrounded by raiders. A better option may be to go the discreet route, using a rugged pack that won't attract attention. The Endurance 9.0 from OGIO could easily serve this function thanks to its quality construction and smart design. The large main compartment is supplemented with a shoe compartment, a lockable crush-resistant pocket for sunglasses or smartphones, and a wet/dry storage section with 360-degree ventilation on the bottom for soaked clothes. It can be carried as a duffel bag or worn like a backpack. Use it as a gym bag, a utility bag, or a low-profile survival pack.

6 MAKE & MODEL
ZeroHour
XD Flashlight

DIMENSIONS
2.28 x 7.28 inches

MSRP
\$225

URL
www.zerohourxd.com

NOTES
At 1.2 pounds, the rechargeable ZeroHour XD Flashlight is by no means an everyday-carry torch. But it's an ideal gadget for the first day or two of a catastrophe when you need both illumination and a means to charge vital electronics that can help you communicate or signal for help. Thanks to its 10,000-mAh capacity, the XD can double as a charger to juice up to two smartphones, GPS units, or Bluetooth-enabled devices via dual USB ports. It has a Cree LED that emits a max 1,000 lumens up to a distance of about 420 meters (or a quarter mile). Plus, it has four modes, as well as two "hidden" modes of strobe and SOS — helpful in all sorts of situations. With a hard-anodized aluminum body, a stainless-steel bezel, and a waterproof design up to 1 meter, the XD Flashlight is a hardcore torch you can store at home, in your car, or in your emergency kit.

7 MAKE & MODEL
Waterlogic
Hybrid Water Purifier

DIMENSIONS
5.5 W x 12.1 H x 13.7 D in.

MSRP
\$300

URL
www.waterlogicfirewall.com

NOTES
Whether a crisis makes your community's water supply questionable or you just want to be doubly sure what you're drinking is safe, an extra filtration system is always a solid backup plan. The Hybrid Home Water Purifier from Waterlogic uses three components to treat H₂O: a carbon filter that absorbs chlorine, microbes, and other contaminants; Waterlogic's Firewall UV technology that claims to remove 99.9999 percent of bacteria and 99.99 percent of viruses; and a reservoir and nozzle that are treated with Biocote, providing antimicrobial protection against the formation of bacteria. As the name implies, the Hybrid Home Water Purifier is ideal for use in your own abode, but it could be loaded up on your boat, RV, or anywhere with an electrical plug.

8 MAKE & MODEL
Kloud City
8-in-1 Multi-Function Hammer

OVERALL LENGTH
6.2 in.

MSRP
\$13

URL
www.amazon.com

NOTES
We've all seen the classic Swiss Army knife, but have you ever seen a Swiss Army hammer? That's probably what you first thought when you saw this little bad boy. Your second thought might have been does it work? While the lock that keeps the pliers' handle closed might not last long, the axe, hammer, can opener, and other tools should do just fine with light-duty tasks around the house or out in the field. Made of stainless steel with a hardwood handle, this unique multitool won't chop down an oak tree, but weighing just 8.8 ounces means it's an option if you're looking to keep your bug-out bag lightweight.



HIGHLIGHTS

PORTABLE
LANTERNS

By John Teator
Photography by Michael Grey

So you've finally made it to safety. Whether you're taking shelter from a passing tornado or hunkering down in a basement until the bad guys leave, at some point you'll need to be able to see in the dark. It's obvious that having a source of constant light is invaluable.

While we always preach that everyone should have a flashlight, keeping a portable lantern at the ready can illuminate your workspace while freeing up your hands. Like most lighting equipment, portable lanterns come in many shapes and sizes with differing features. In this guide, we take a look at models that can be easily stowed. These lanterns are made to be packable and can be stuffed into a car trunk, glovebox, camping pack, or bug-out bag. Depending on what your end use is, there's a lantern here that'll fit your needs.



MAKE & MODEL

Black Diamond Apollo

Kelty Flashback Mini

COLORWAY

Matte Black, Ultra White (shown)

Any Black (shown), Any Green, Any Orange

LUMEN OUTPUT

High 80 / Low 10

Lantern Mode: High 50 / Low 20; Flashlight Mode: High 70 / Low 20

RUNTIME

High 15 hr. / Low 60 hr.

High 13 hr. / Low 38 hr.

OVERALL WIDTH

Closed: 3 in. / Open: 5.5 in.

Closed: 2.25 in. / Open: 2.25 in.

OVERALL HEIGHT

Closed: 5.125 in. / Open: 9.625 in.

Closed: 3.75 in. / Open: 5.25 in.

WEIGHT WITH BATTERY

11.4 oz.

8.8 oz.

BATTERY TYPE

AA (four, not included) or NRG Rechargeable Battery Kit (sold separately)

AAA (four, not included)

CONTROLS

Constant-on/variable-adjust push button

Constant-on push-button switch

MSRP

\$50

\$40

URL

www.blackdiamondequipment.com

www.kelty.com



WWW.SILENCERCO.COM

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GEAR UP

1 MAKE & MODEL Zippo OUL

LENGTH
7.75 in.

MSRP
\$20

URL
www.zippo.com

NOTES

If fire-building isn't in your skill set, consider the OUL, or Outdoor Utility Lighter. It has a dual flame technology that makes it wind-resistant, while its metal construction and rubber handle let it shrug off harsh conditions. There's also an adjustable flame dial, a patented child-resistant safety button, and a ring to attach the OUL to a backpack. Once depleted, it's refillable using Zippo Premium Butane Fuel.

2 PUBLISHER & TITLE Ulysses Press *Countdown to Preparedness: The Prepper's 52-Week Course to Total Disaster Readiness*

FORMAT
Trade Paperback

MSRP
\$16

URL
www.ulyssespress.com

NOTES

If you're a city slicker who's completely new to prepping, figuring out where to start can be daunting. Fortunately, there's Jim Cobb's *Countdown to Preparedness*. Unlike other survival manuals, this 256-page paperback is presented like a yearlong course with each chapter representing a week of study, complete with homework assignments. The first section covers the basics — food storage, family emergency planning, etc. — but the four other sections (each centered on a season of the year) can be read in any order. While Cobb doesn't go into depth on any one lesson, he does emphasize things that you might not think of, such as saving extra cash every week to buy proper gear and supplies.

3 MAKE & MODEL Wild Things Tactical Knuckle Roaster

COLORWAY
Coyote (shown), MultiCam

MSRP
\$119 (coyote), \$79 (MultiCam)

URL
www.wildthingstactical.com

NOTES

You ever see a football game in which a quarterback tucks his hands into a white pouch around his waist? He's not reaching for a snack or his playbook — he's warming his hands. Now thanks to the Knuckle Roaster from Wild Things Tactical you can do the same, whether you're in a pickup game, going on a hunt, or bugging out in the middle of the winter. Just slip your hands into either end, and the Polartec Power Stretch barrier will keep your paws toasty in separate slots. There's also a zippered storage pocket and an adjustable web belt. The Knuckle Roaster comes in MultiCam, but for an extra 40 bucks, you can get it in a coyote version that's also flame resistant.

4 MAKE & MODEL Columbia River Knife and Tool Sting 3B

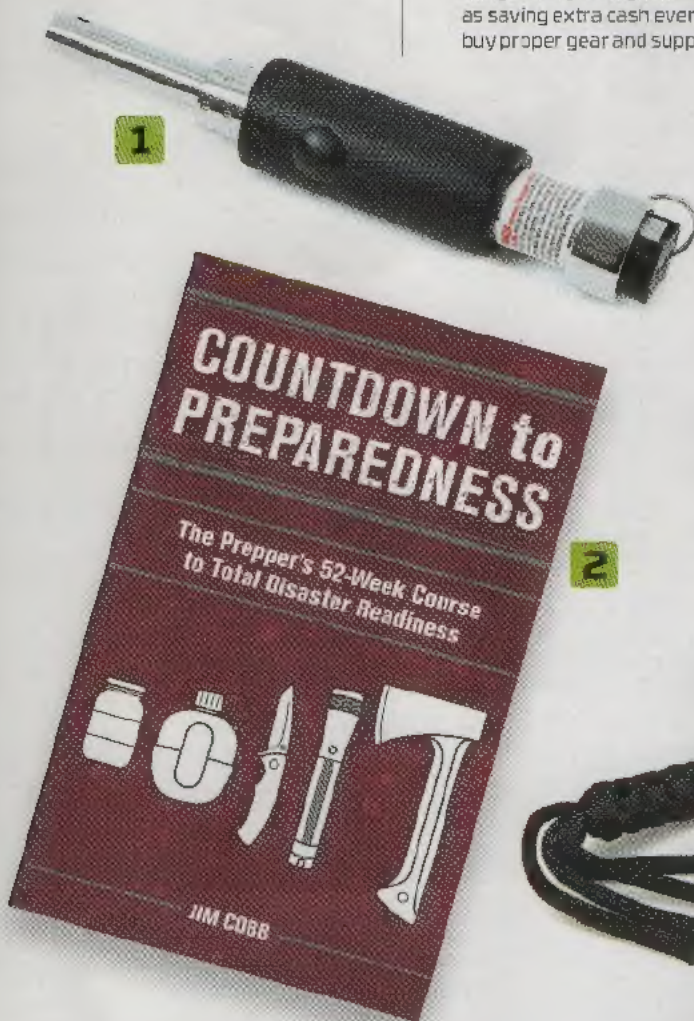
OVERALL LENGTH
7.19 in.

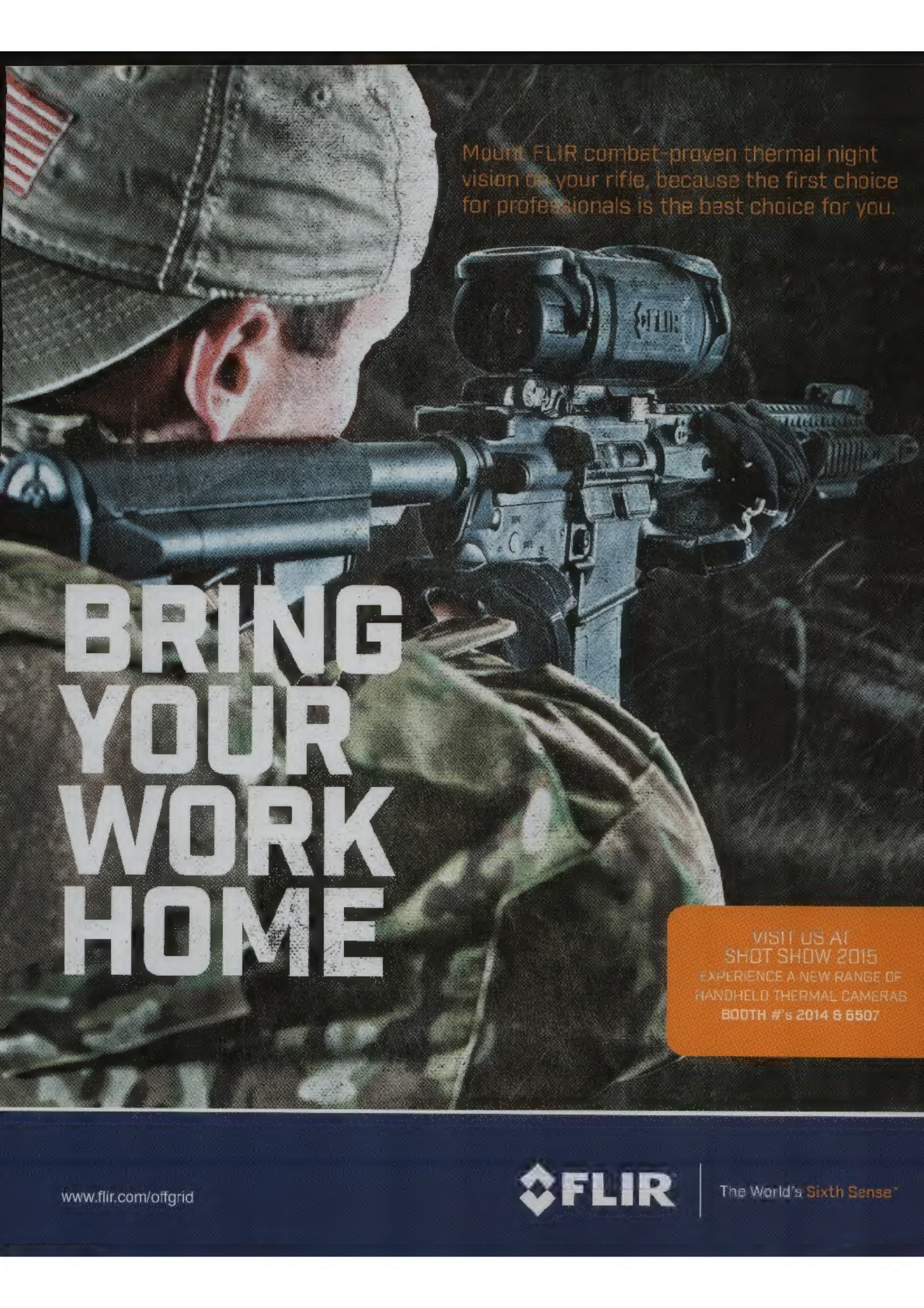
MSRP
\$60

URL
www.crkt.com

NOTES

The Sting 3B is a full-tang fixed blade that has the same feel as the original Sting design, but weighs less than half. The 8Cr13MoV stainless-steel blade features a spear point, two cutting edges, and a hollow ground. The comfortable handle has textured G-10 scales that offer an assured grasp and high durability. The Sting 3B comes with a glass-filled nylon sheath that can be strapped to your belt, your boot, or your backpack.





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Tall Kneeling Thoracic Spine Rotation with Tip

Targets: Back

Repetitions: 3 per side

Start in a kneeling position with both knees down. While staying tall, rotate from your upper back with your hands behind your head. Your hips should remain forward. Once you turn as far as is comfortable, tip your torso on the same side as the direction you're turning. Repeat, turning a little further each time. Complete three times on each side.



Cold Weather Modifications

Cold weather requires a few minor exercise modifications that should be addressed to further the effectiveness of a warm-up. Since the topic here is staying active and preparing for cold weather scenarios, it's safe to assume the ambient temperature will be pretty frosty. In light of that, increasing tissue temperature is weighted a little more heavily.

Passive, pre-warm-up strategies can be used prior to exercise to further your preparation for cold weather exposure. The most obvious way is to spend five to 10 minutes in a warmer environment wearing warm clothes to raise your body temperature and trap heat in your clothing. You can also consume a warmer beverage such as tea or coffee. Not only does the heat of the drink help to elevate body temperature, the caffeine can also improve performance.

Look at adding more layers or warmer fabrics during your warm-up and activity. What fabrics and how many layers will depend on how cold it is. The goal in a warm-up should be achieving a light sweat. However, in the cold, sweating isn't ideal as it's an awfully efficient cooling mechanism. It's best to shoot for a general feeling of increased warmth, but do your best not to break out into an all-out sweat.

Be mindful of hydration as well. Water can still be lost through sweating and even breathing. Exercise increases breathing rate to meet the demand of the activity, and with breathing, water vapor is lost, possibly leading to dehydration over time.

Whether it's something planned or not, physical activity in the cold can present several challenges. Your ability to adequately sense cold and respond accordingly can be affected by several factors, including exercise-induced fatigue, depleted energy stores, and sleep deprivation. So, make sure you're adequately rested and fed ideally, before venturing outdoors for activity. Follow these tips, and you'll be ready for whatever Old Man Winter has in store this year. ❄️

About The Author:

Ryne Gioviano is the co-owner of Welligee Personal Training & Lifestyle, located in Naperville, Illinois. He received his master's degree in exercise physiology and is a certified personal trainer through the National Strength and Conditioning Association.

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BY DR. CHRISTOPHER

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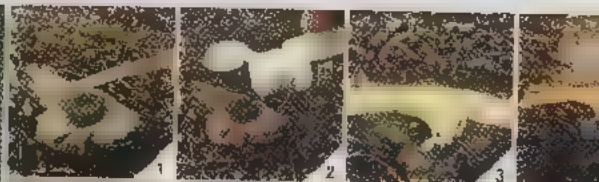


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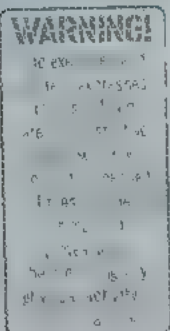
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FRIGID FITNESS PREPARATION

Don't Put Your Physical Preparation on Ice

By Ryne Gioviano
Illustrations by Chris Bywater

Who enjoys spending time frolicking in frigid temperatures? Exactly. As a result, staying warm and cozy indoors often comes at the expense of physical activity. Humans were never meant to hibernate, contrary to what most people do after Thanksgiving dinner or what teenagers think when they're forced out of bed on a Saturday morning. We don't always have the luxury of a heated building with a roof over our heads, so our ability to cope with the environment is critically important to our ability to not only survive, but thrive in a cold weather scenario.

Winter can present many challenging situations and force you into an uncomfortable, possibly even dangerous environment for an indeterminate amount of time. Icy conditions often lead to increased traffic, car accidents, and vehicle breakdowns. Getting stranded can mean being stuck on the side of the road waiting for a tow truck or a lengthy trek through knee-high snow.

Maintaining or improving your fitness level is essential in freezing conditions, as your chances of escaping a potential hazard drops as the mercury falls. Don't let your fitness level be the weak link in your chain of preparedness.



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Injuries

Cold and Wet Injuries

Chilblains

Chilblains are small, itchy, red, swollen, and painful spots on the toes and fingers caused by cold weather. They are most common in people with poor circulation and those who have been outdoors in cold weather for a long time.

Frostbite

Frostbite is a cold injury that occurs when the skin and underlying tissues freeze. It is most common on the extremities, such as the hands, feet, nose, and ears.

Frost/foot

- Feels: Numbness and pain
- Causes: Severe damage to the

Cold and Dry Injuries

Frostnip

Frostnip is a mild cold injury that occurs when the skin is exposed to cold weather for a short time. It causes the skin to become numb and red, but it does not cause any permanent damage.

Frostbite

- Looks:
- Feels:

SOURCE: *Offgrid Survival Handbook* (Amazon.com)
BY STEPHEN BROWN

The Spiderman

Targets: Groin, hips, hamstrings
Repetitions: 6 per side

Take an exaggerated step forward and place your hands on the floor in line with the instep of your front foot. Complete six times per side



The Spiderman with Rotation

Take an exaggerated step forward with your left foot and place your hands on the floor in line with the instep of your left foot. Now turn your upper body and point your right fingers toward the ceiling. Complete six times then do the same on your left side



Frosty Fashion

When it comes to cold-weather apparel the primary goal is to keep your core (torso) warm. Core warmth must always be maintained. When core temperature drops, blood vessels constrict in the extremities to reduce blood flow and conserve heat. Reduced blood to the hands and feet leads to diminished motor control and other physiological defects. It's obvious, then, that your clothing will make or break your survival.

For the base layer, prioritize tighter-fitting moisture-wicking fabric, as you still might sweat regardless of the temperature. The second layer should be a thermal layer designed to trap heat well. These are made in varying thicknesses and fabrics, so look to match the fabric to the temperature. The colder it is, the thicker the fabric should be to trap more heat. Lastly the outermost layer should be waterproof and windproof. Protection from the elements is the top priority. This layer will also act to prevent heat from escaping through the fabric. Make sure to choose colors that fit the activity as brighter colors will allow you to be found in snow more easily.

The face and extremities are at the highest risk for developing cold injuries due to skin exposure and blood flow alterations. The less skin exposed the better. Therefore gloves are mandatory. They maintain manual function and movement, as well as provide a layer of paw protection because who knows what you'll have to do when you're suddenly caught in an emergency. The head can be a significant source of heat loss in cold weather. It's best to wear a facemask (similar to a balaclava) that covers everything from your neck to the top of your head. The breathing of cold and dry air is a major issue with physical activity in the cold, so the mask will allow air to be warmed and humidified before inhaling. Heat loss and potentially, dehydration can occur if your breathing rate gets high enough. But be prepared to get a few stares, though as "terrorist chic" isn't quite in fashion this season.

Once you've selected your winter clothes, don't be alarmed if you feel just a little chilly for the first five to 10 minutes of activity. If you're feeling warm immediately, the heat generated through exercise will end up causing you to overheat, possibly leading to heat stress. Believe it or not.

Warming Up

A properly designed warm-up is the critical starting point to any workout or physical endeavor. While you may be able to get by without one, you're increasing the likelihood of injury and, at the very least, reducing your output during that activity.

A warm-up should address key things like increasing bodily tissue temperature, improving joint mobility and flexibility, priming your nervous system, and improving posture and alignment. Within this warm-up, it's best to address the more mobile joints of the body, such as the hips, ankles, and thoracic spine.

For ankles, the wall ankle mobilization with hip flexor stretch is very beneficial. The "Spiderman" works well to gain mobility in the groin and stretches the back hip as well. The thoracic spine features both extending and rotating requirements, so something like a tall kneeling thoracic spine rotation with t.p. works very well. You can also put them together into a Spiderman with a rotation, addressing all three areas in one movement.

Wall Ankle Mobilization with Hip Flexor Stretch

Targets: Ankles, hip flexors

Repetitions: 8 per side

Start with one knee down and the other foot planted in front of you. Grab the ankle of the back foot and place your other hand on the wall. Slowly rock forward, attempting to get your knee to the wall while keeping your heel down. Complete eight times per side.



BRITE-STRIKE'S Brite-Blade

411: Featuring replaceable LED lights, the multi-featured Brite Blade is specifically made to handle diverse survival situations. It includes a 3.5-inch blade, carbide window punch, a seatbelt and wire cutter that doubles as a wire stripper and a fire starter striking tool. Its body is made of 6061 hard-anodized aluminum and has a slot just above the blade for one of two included mini LED flashlights (one white, one red) to adhere to. At the base of the mini LED lights are magnets that allow them to not only be retained in the body's light slot, but also on any ferrous metal, such as iron and steel. The mini flashlight units are interchangeable and rated at 45 lumens each. To power the light on, it must be removed from the knife and its head twisted until it turns on, then replaced back into the knife's body.

With the light being positioned just above the blade, shadows are cast from the blade depending on what angle the knife is being employed. Most chopping and slicing maneuvers will create a dark enough shadow to make it cumbersome to use. The good news is that head-on stabbing and jabbing angles are affected less by the shadow of the blade. (At least you can see what you are stabbing.) Since the light is removable, you can conceivably remove it and reposition it to cover the area you need to see – even on the blade itself. The two lights are small and not meant for any meaningful use at distance, but are serviceable in your immediate workspace.

The knife has many features we like seeing in a folder, including the use of 440C stainless steel for its blade, an interchangeable full-length spring steel pocket clip, and spring-assisted opening mechanism. The blade

stayed straight no matter what angle we used it at, even under full body weight. The model we received for this review has a combination blade with three serrations, though a full-straight edge version is also available. The blade is quickly deployed with a flick of the thumb and kept in place with a stainless steel liner lock.

Verdict: The Brite Blade is a solid feeling folder that incorporates a few survival-themed features that we really like, such as a removable fire-starting striking tool and robust window punch. As competent as the knife is, we feel that the flashlight portion of this combination was not as strong – surprising since it comes from Brite Strike, which is primarily a maker of tactical illumination products. All in all, it's a very capable knife with a light that you can use in a pinch. We look forward to seeing what innovations the next generation of lighted knives will bring.

NO MAKE & MODEL
Brite-Strike Brite Blade

OVERALL LENGTH
8.6 in. (open); 5.1 in. (closed)

BLADE LENGTH
3.5 in.

BLADE MATERIAL
440C stainless steel

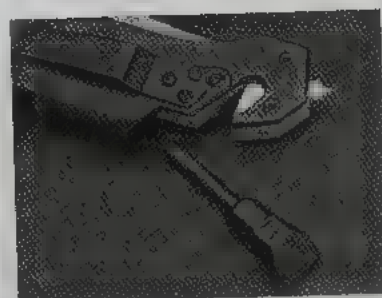
WEIGHT
5.35 oz. (with batteries)

BATTERY
LR621 (eight included)

STATUS
Unlisted

MSRP
\$150

URL
www.brite-strike.com



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BladeLight Camp

MAKE & MODEL
SOG BladeLight Camp

OVERALL LENGTH
9.2 in.

BLADE LENGTH
4.5 in.

BLADE MATERIAL
8Cr13MoV stainless steel

WEIGHT
4.9 oz.

BATTERY
AAA (included)

RUNTIME
84 mins.

PRICE
\$92

URL
www.sogknives.com

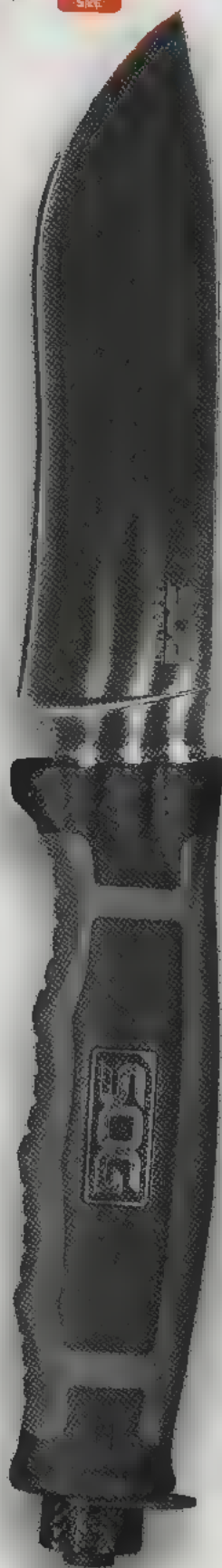
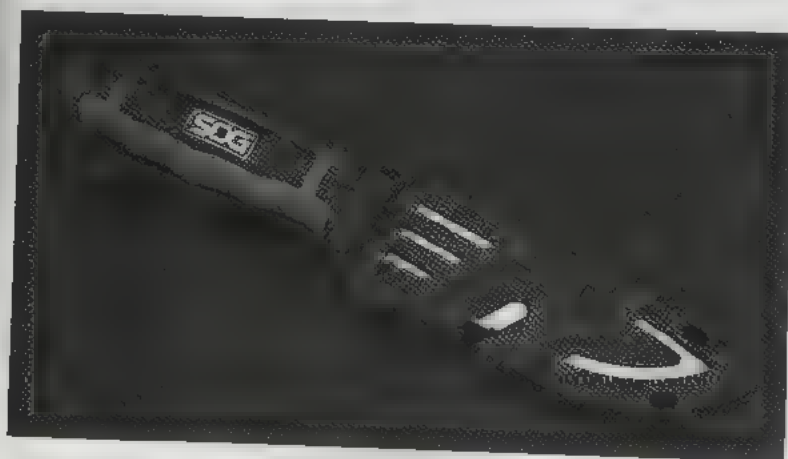
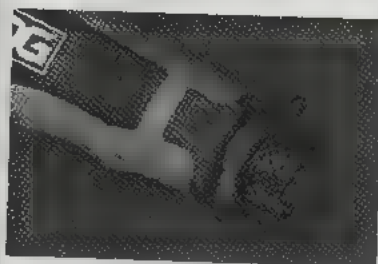
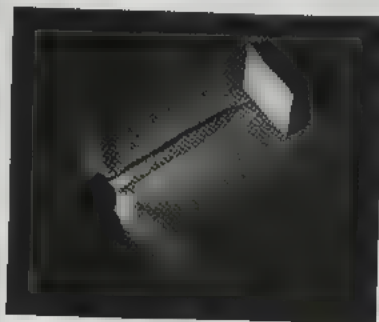
411: The BladeLight Camp is one mode in a full line of illuminated knives offered by SOG. Designed with campers and outdoor enthusiasts in mind, the BladeLight Camp features six bright LED lights and a satin-polished 4.5-inch stainless-steel, fixed blade. With three LEDs mounted on either side of the blade, the lights combine for an output of 30 lumens. That's enough illumination to light up a small workspace or the path in front of you. We found the positioning of lights on both sides of the blade a low for shadowless, uninterrupted light to shine out to an effective distance of 20 to 25 feet. Its reach strength is within the confined workspace of 2 to 3 feet, however. The light's color is white, bordering on bluish-white and isn't harsh on the eyes, even when being used close up in the dark.

The knife is securely stored in a hard nylon sheath that has an integrated blade sharpener and metal belt clip. It has slots that allow the six LEDs to shine through it so you don't need to point your unsheathed knife at whatever you wish to light up. The lights are powered by one AAA battery and are activated by a rubberized push-button switch in the butt of its glass-reinforced nylon handle. Those

with sausage fingers might find the handle a bit small for their liking, but its slightly grippy rubber texture does make it easier to maintain a good grip.

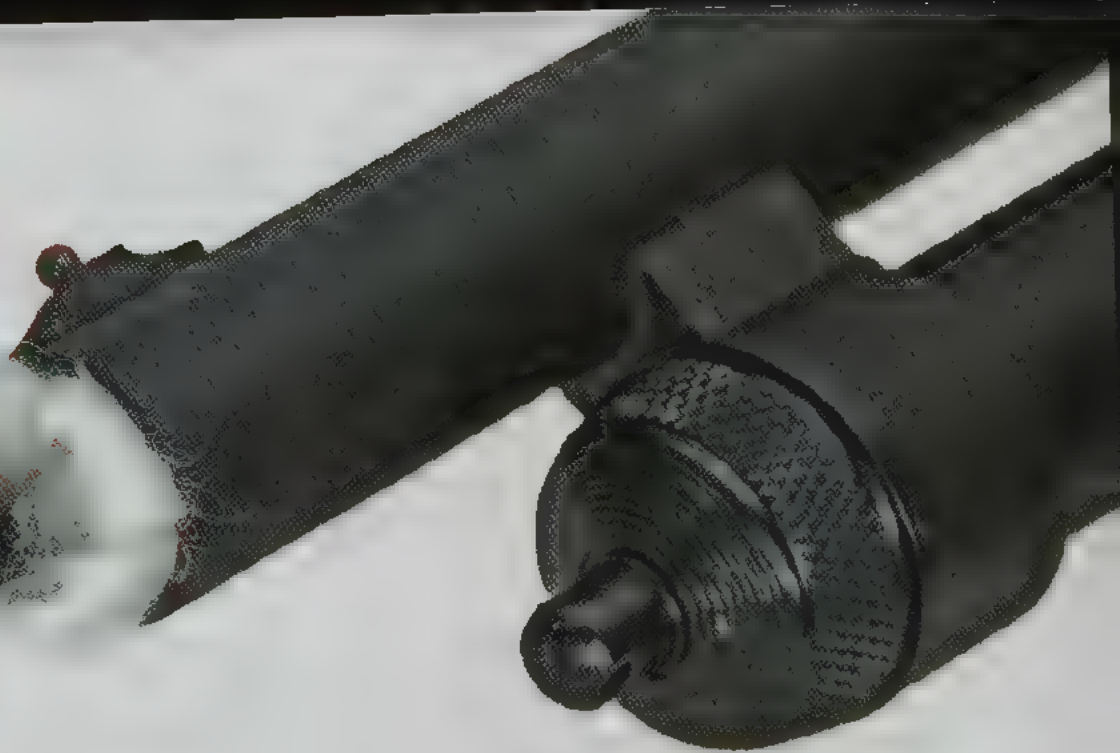
The BladeLight Camp measures a length of 9.2 inches overall and weighs a paltry 4.3 ounces. The blade is made of 8Cr13MoV, a made-in-China stainless steel that's commonly used to help balance price with performance. We observed no flexing even with our full weight on it while cutting into different materials and at different angles. The blade looks and feels capable and should offer problem-free usage.

Verdict: After spending an extended period of time with the BladeLight Camp, we see why SOG made efforts into creating a line of light-capable knives. Being able to light up what you are cutting, slicing, or prying is a definite bonus when you only have two hands to work with while in the dark. Sure, it's easy to say that you wouldn't need a lighted knife if you were wearing a headlamp, but let's face it, we don't always have the right tools for the right job available to us at all times. A lighted knife takes two tools and combines them into a single useful package. Granted, the knife's light is just enough to work with and isn't a replacement for a dedicated flashlight by any stretch of the imagination. You'll still want a "real" flashlight when you really need to see what's lurking in the dark. But if we had a choice between a knife that can help light up the night and not, we'd choose this one for its added capability.



USE

5



Bore Cleaner

Having a clean, properly functioning firearm for defense is a good idea, especially if it ever hits the fan. Should you find yourself out of cleaning patches, an alternative way of cleaning your firearm is by way of tampon. Most tampons are perfectly sized for 12-gauge shotgun barrels, but smaller wads ripped from the tampon would work for other calibers. Use the tampon as you would a cleaning patch, running it through the barrel several times with cleaning and lubricating solution if it is available. Use another piece of tampon to clean out the breech and chamber.

USE

6



Candlewick

The string attached to tampons makes excellent candlewicks. Perfect for blackout situations, you can fashion a makeshift candle by using anything such as cooking oil, shortening, crayons, and older used-up candles. Make sure to coat the string in your chosen candle fuel to allow the candle to burn more efficiently. Fill a non-flammable, open-top container with the fuel and place the wick into it. Light it and enjoy the slow burn.

LIGHTED KNIVES

Reviewing Brite-Strike's Brite-Blade and SOG's BladeLight Can

By John Teator

A hard-headed reader, you know that knives can be lifesavers. But since we can't always carry our tool chest with you everywhere

inventions ever. They can start fires. Flashlights let us see in the dark. Combining the two, we can combine them into one tool. In their tools, some manufacturers have added lights to their knives. Of course, there

in 1891. Adding LEDs to the latest in the evolution of the knife is a lighted knife. It's not a standalone knife, but it's more than two tools in one. It's a knife that can do much equipment or must have a light while increasing functionality. It's a knife just as

light (pun intended) on the SOG's BladeLight Can. It's a good fit for you





Rudimentary Filter

Whether you need to filter water for drinking or fuel for your vehicle, the cotton-and-rayon wadding of a tampon makes for a basic yet effective filter. By no means does this method filter biological, chemical, or heavy-metal impurities out of water. Further purification steps will need to be taken to make your water safe to drink. It does, however, filter out a good portion of the larger particles found in water sources so that your other purifying methods – whether by distillation, boiling, tablets, or through another filter – can be more efficient.

If things get really dire out there and you find yourself in a *Mad Max* situation scouring questionable sources for fuel for your vehicle or electrical generator, make sure your fuel system stays clear of contaminants by filtering your found fuel through a tampon filter first. Contaminants such as sand can put your vehicle or generator out of action, requiring repairs and spare parts. That's trouble you just don't need in a SHTF scenario.

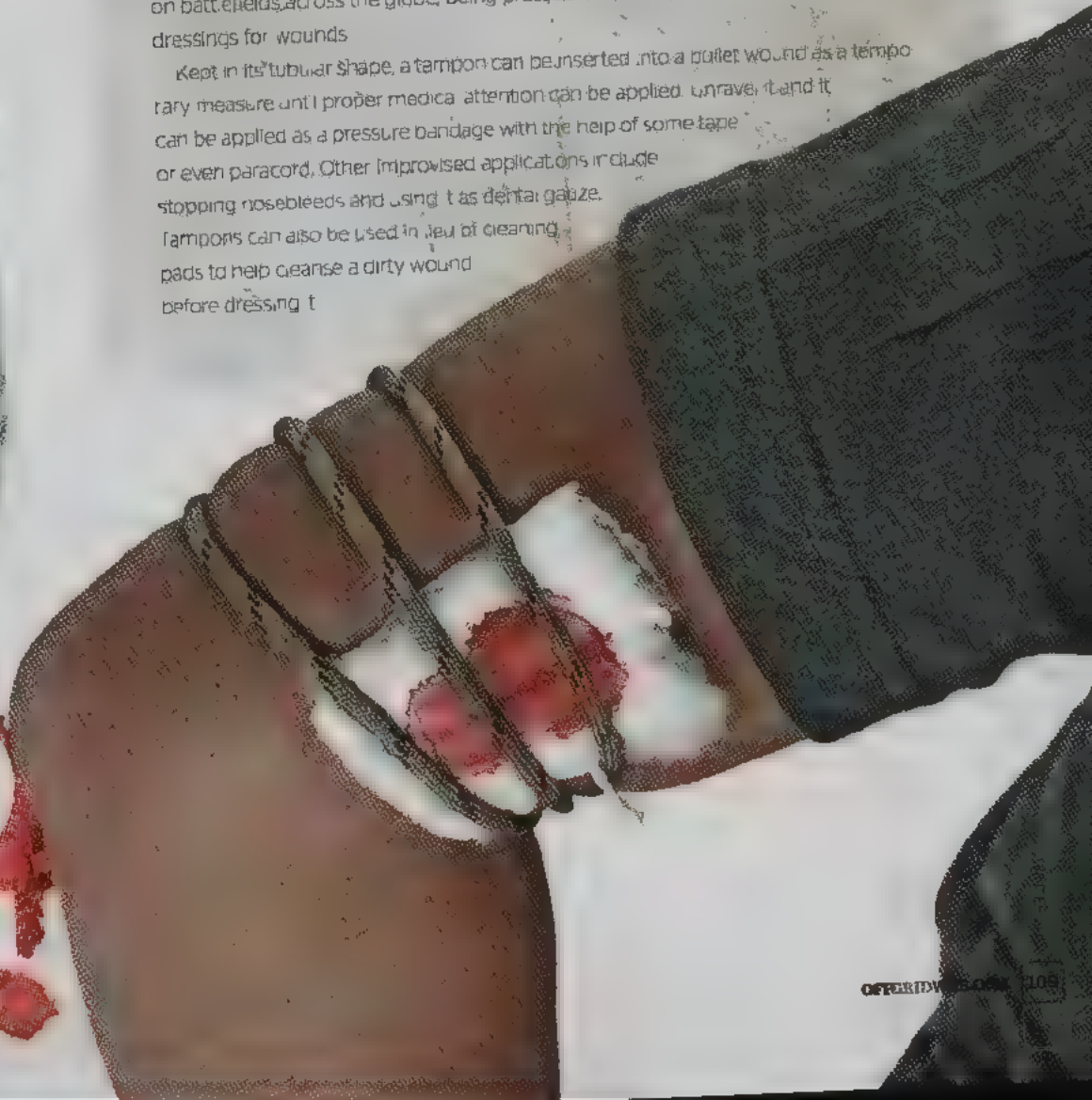
USE



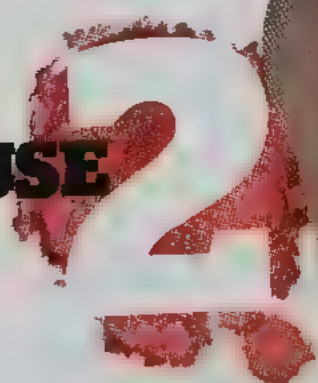
Stop Blood Flow

The most obvious use for tampons is to slow or stop bleeding, thanks to their absorbent properties. "Well, duh!" you might say. But you don't need to limit this product to only its original application. Believe it or not, tampons have found a place on battlefields across the globe, being pressed in to combat service as impromptu dressings for wounds.

Kept in its tubular shape, a tampon can be inserted into a bullet wound as a temporary measure until proper medical attention can be applied. Unravel it and it can be applied as a pressure bandage with the help of some tape or even paracord. Other improvised applications include stopping nosebleeds and using it as dental gauze. Tampons can also be used in lieu of cleaning pads to help cleanse a dirty wound before dressing it.



USE



Fire Kindling

Fire is life. So, survival often depends on how quickly and efficiently you can get a fire started. Cotton is probably the most flammable fabric commonly found in household use and rayon is a close second. That's perfect for you since tampons are made of just that mix. As a bonus, if you purchase tampons that come in a plastic wrapper your kindling will stay dry even if you are drenched.

Take the tampon out of the wrapper and applicator and rip it into a few pieces. Fluff up a piece and use it as your fire's kindling. It will light up quickly but you'll have some hand sanitizer, petroleum jelly, ointment or even an antacid a little bit in for even better fire-starting results. Keep the leftover pieces of tampon to start more fires in the future.

USE

3

Blister Control

Blisters form on your feet because of friction between your skin, socks, sweat, and shoes. Oftentimes, ill-fitting shoes or footwear that hasn't been properly broken in will cause blisters to form. When you're humping your bug-out bag to safety, you don't need the added pain and irritation that a blister can bring. A painful blister can cause you to move slower, thereby slowing down your whole party. And there's the added danger of infection if it gets worse.

If you feel one coming on or feel that there's the potential of one forming and you don't have access to proper blister care, cover the sensitive area tightly with a piece of tampon and a Band-Aid or some tape, keeping yourself mobile is imperative, so shielding your feet from blisters is a must.

USE

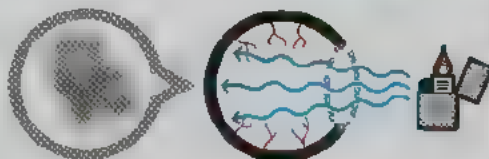
4

How Vision Works

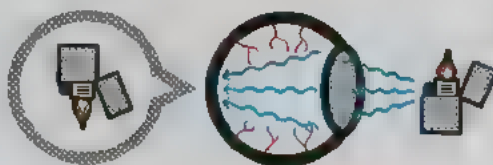
Vision is our brain making sense of light that is collected by our eyes. As light bounces off an object, it travels into our eye focused by the lens, and lands onto the retina. The retina uses this light to form an image that is transmitted to the brain via the optic nerve.



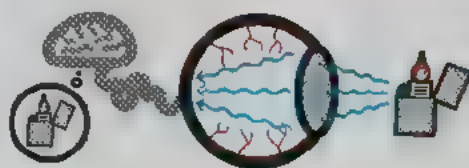
If our eyes had no lenses, light would enter the eyes and land on the retina from every direction, making for a very blurry image.



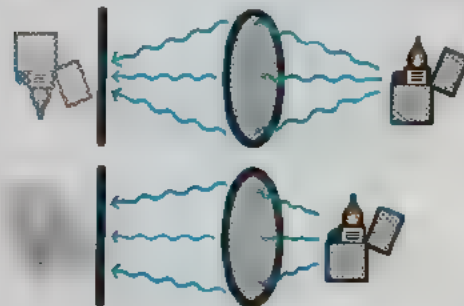
The eye's lens helps focus light and form it into a sharp image onto the retina.



The optic nerve transmits the visual information from the retina to the brain, which is what allows us to see.



Whenever you look at an object, you'll realize that the background and foreground are blurry while the object you are looking at is in focus. This happens because the eye's lens can only focus light coming from one distance. This is called the eye's focal length. Objects too near or far are perceived as out of focus.



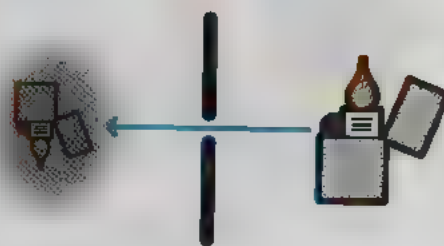
Fortunately for us, our eye's muscles can contract or expand the lens so it can change the focal length, allowing us to see clearly at various distances.



How Pinhole Vision Works

Pinholes, by their very nature, limit the amount of light that can enter the eye. This helps block out extra light noise that would otherwise create a blur. Thanks to the small opening, light streams into the eye from a focused direction. So your hand becomes an impromptu lens. Less light bouncing around inside the eye means that looking through a pinhole inherently keeps things in focus.

By looking through the pinhole you create with your fingers, you are limiting how much light is entering your eye, thereby "filtering" the excess light that would otherwise blur your vision.



Disadvantages

Disadvantages to using pinhole vision, however, are that it does mean less light getting through to the eye, as well as a severely limited field of view. Less light means that your vision while looking through a pinhole is darker.

But when push comes to shove, using this method for even limited focused vision is a nice tool to have in the proverbial tool box. In a SHITF situation, it could mean having the ability to tell if that dark blob 30 yards away is an abandoned car or a band of marauders lying in wait.

OFFICIAL

Because walking around with your hand to your face can get a bit annoying, we suggest keeping backups of your eyeglasses stored away in case you get separated from your primary set. Keep an extra pair or two of your prescription glasses in your bug-out bag or an alternative location, such as at work or in your vehicle. Even older prescription glasses can be of some help versus not having glasses at all.



BLOODY INGENIOUS

6 Survival Uses for Tampons

By Martin Anders
Photos by Michael Grey

Some of the most ordinary items found at home can be used alternatively for all sorts of life-saving needs. Repurposing everything from cooking oil, snack chips, and even used tea bags can help you get through a tough spot - if you know what to do with them (See "Household Survival" in OFFGRIDS Spring 2014 Issue).

As you can tell by the title of this article, we're about to delve into a household item that some people might be too shy to speak about, let alone buy, stock, and experiment with. Yes, people,

we're talking about one particular feminine hygiene product here: the tampon.

In this case, tampons are no laughing matter. Knowing what you can do with them can mean living to fight another day, so listen up. Tampons are made out of blends of cotton and rayon. Cotton and rayon are both absorbent and flammable materials, making them useful for a wide range of survival uses. Tampons come in many variations, most any of them will work for our suggested uses in this story. But for best results, we recommend non-scented ones that come wrapped in plastic.

Brownells**ESG Essentials All-In-One Kit**

Brownells, a leading retailer of firearms parts, tools, and accessories, introduced its Emergency and Survival Gear (ESG) lineup just this past year. The ESG kits cover almost any kind of situation you might encounter from being snowed out during a complete white out to trying not to float away after a major flood. The ESG Essentials All-In-One Kit combines four ESG Kits into one all-inclusive package you can carry on your back.

Though it's the most expensive pack in this guide, it's priced at a discount when compared to trying to piecing the kit's parts together individually. The array of tools, gear, and supplies in this kit should give you ample capacity to face most any emergency. The Power Hygiene, Water Filtration, and Civil Unrest kits are organized in their own separate organizer bags. The compact backpack the kit comes in fits about 22 liters of gear, is sturdy, and is made of thick nylon with heavy-duty zippers. It has hip and sternum straps to help you balance the go-bag on longer treks.

This kit allows you to do a whole host of key tasks: charge batteries and devices with a Goal Zero solar panel kit, keep your spirits and health levels up with toiletries in the hygiene kit, filter water and stay hydrated in a variety of ways and plenty more.

Note: It doesn't include water, food, or personal protection items such as gloves, goggles, and respirator masks, so you'll still need to add your own for a more complete bug-out bag. Brownells has other kits, such as its ESG Essentials Pandemic Kit, available that could complement this kit if you have the inclination (and the cash) to add more gear.

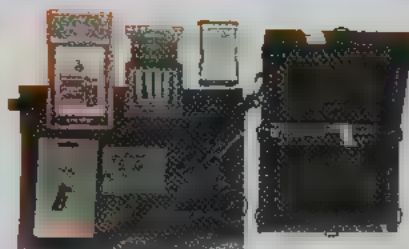
MAKE & MODEL
Brownells
ESG Essentials All-In-One Kit

APPROXIMATE DIMENSIONS
18 in. H x 9 in. W x 8 in. D

WEIGHT
8 lbs

MSRP
\$380

URL
www.brownells.com



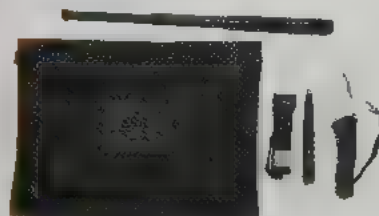
- 1 Goal Zero Guide Kit
- 1 Goal Zero rechargeable AAA batteries
- 1 SureFire CR123 batteries (6 pack)
- 1 UST Volt XL
- 1 Organizer bag



- 1 UnadSpin OK 72 Hour Kit
- 1 Adventure Medical Kits Adventure Medical Wipes
- 1 UST Survival Towel (2 pack)
- 1 Organizer bag



- 1 Sawyer Mini Water Filtration System
- 1 Potable Aqua Chlorine Dioxide Tablets
- 1 CamelBak Luddy
- 1 Oraliv
- 1 Organizer bag



- 1 Pro Mag Archangel Defense Pen
- 1 Top Cop 0.68-oz Streamer
- 1 ASP Baton
- 1 Ontario Knife Company JPT-3S Drop Point Folding Knife
- 1 Organizer bag

PINHOLE VISION

Glasses Broken? Contact Lenses Fall Out?
See Without Them.

By Martin Anders

A bespectacled man, who only longs to read, survives a nuclear holocaust and finds himself the last man on Earth at a library full of books. He thinks he finally has all the time in the world to pursue his favorite pastime...until he breaks his only pair of glasses. This ironic tale was the plot of "Time Enough at Last," a 1959 episode of *The Twilight Zone*. Although this man's misery played out in a sci-fi TV show, his predicament is something that anyone who has corrective lenses can relate to and should be aware of.

In any type of emergency, there is a risk losing, breaking, or not having enough time to don your glasses. Contact lenses require even more time to put on, can take more care to maintain, and are nearly impossible to reuse or find if lost. But what if a disaster hits unexpectedly? What do you do if you are caught without the benefit of having your optical aids?

Fortunately there is a way you can focus your blurry vision quickly and without any tools—in fact, all you need is your hand. Fire this impromptu sight-restoring maneuver in your mental survival skills toolbox under "just in case."

Pinhole Fingers

By forming a small "pinhole" with your fingers and looking through them, you'll find your vision is significantly sharpened, even if you regularly have very blurry vision. Go ahead, take your glasses off and try it. Neat, right? The trick isn't it? This simple action can help you when you're in a pinch. But just how does it work?

Optic nerve
which is what
ever you look
are bl

WARNING!

This article is meant to be a quick overview and not a detailed guide on improvised vision improvement methods. Whenever possible, always carry spare prescription glasses or contact lenses. Attempting to see without prescription eyewear is solely at the reader's risk.

EVERY ROUND COUNTS

WHEN YOU GO OFFGRID



A small, lightweight, short travel bolt engages with the slider to reduce felt recoil.



The slider absorbs recoil energy and redirects the energy downward and away from the shooter's shoulder, reducing muzzle climb.

The KRISS Vector .45 ACP CRB is the ideal firearm for the 21st century bug-out-bag. Being prepared with the most innovative development in firearm technology is now 120 years. The KRISS Super V recoil mitigation system reduces felt recoil by 60% and muzzle climb by 95% when compared to traditional operating systems. The advanced polymer/composite construction is both durable and lightweight. When faced with sudden, extreme situations, you will be ready with the most powerful and controllable .45 ACP firearm in the world.



Visit your local KRISS dealer today to discover the newest addition to your bug-out-bag.

Locate your nearest dealer at www.kriss-usa.com or call our toll-free number: 1 855 KRISS US (574-7787).

KRISS



NOT A DROP TO DRINK...

...Unless You Improvise With
Your Own DIY Water Filters

By Jim DeLozier

A

WARNING!

Be advised: This is a quick overview of improvised water filtering and not a detailed guide. Improvised methods are not guaranteed. Water of questionable quality is potentially dangerous and you do so at your own risk.

Ready America 4-Person Emergency Kit

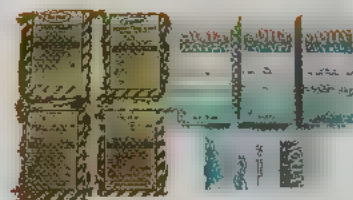
It is recommended that we should be prepared to fend for ourselves for at least the first 72 hours after a disaster. The Ready America 4 Person Emergency Kit is a decent start to hit that goal. Compared to the other kits in this guide, this bag is bare bones, but it does have some of the basics covered. For sustenance, it includes four bricks of 2,400-calorie rations and four liters of water. Ponchos, goggles, and dust masks for four people are included, as is a 107-piece first aid kit for very minor injuries.

The backpack that the kit comes in leaves a lot to be desired, however. It is rather flimsy and reminds us of backpacks we took to school — when we were 7 years old. On the positive end, this bag has a reflective strip on its front pouch as well as a reinforced rubberized handle up top, which are nice touches. We do wish a higher-quality zipper were employed because the ones on this bag feel like they could fall at any time.

While this kit is not our first choice in disaster preparedness, its price tag makes it a solid fourth or fifth option. You can purchase one of these to have ready at locations that you don't frequent much (your mother-in-law's, for example), but would still like to have a kit ready, just in case.



5 FEET



- 4 Food ration bars
- 4 Boxes of water (1 liter each)



- 4 Emergency ponchos
- 4 Safety goggles
- 4 Disposable dust masks
- 8 Nitrile gloves



- 4 Survival blankets
- 1 First Aid Kit (107 pieces)
- 4 Emergency light sticks (12 hr)
- 4 Pocket tissue packs
- 1 Pair of gloves
- 1 Emergency whistle
- 3 Biohazard bags
- 12 Moist towelettes

NO MAKE & MODEL
Ready America
4-Person Emergency Kit
(Item #70380)

APPROXIMATE DIMENSIONS
18 in. H x 12 in. W x 9.5 in. D

WEIGHT
16 lbs 4 oz

MSRP
\$100

URL
www.readyamerica.com

Lansky Tactical Apocalypse Survival Kit

Lansky's Tactical Apocalypse Survival Kit, or TASK, is a lightweight, no-nonsense bug out bag that houses only the most essential of survival tools. There are neither provisions nor water to weigh this kit down. What it does have are tools that were carefully selected for their practicality and efficiency.

The TASK includes a multi-use axe, LED flashlight, multi-tool/combo-edge knife, a LifeStraw for on-the-fly water purification and more. Everything is housed in a heavy-duty 20-liter nylon backpack, which features a padded back panel, a large main compartment and front pouch, both with organizational pockets, and compression straps that help keep everything held down in place. The back of the bag has a zippered compartment that can fit a hydration carrier in case you wanted to add one. Mesh and elastic water bottle pouches are found on both sides of the pack for additional storage. Its hip and sternum straps are adjustable to help you find the perfect fit and support. This bag is capable of carrying more than it comes with so although it is on the small side, it does have additional space to add your own selection of gear and supplies to it.



- 1 Multi-use battle axe
- 1 20-Function multi-tool
- 1 LifeStraw water purifier
- 1 Tactical flashlight



- 1 Easy Grip knife
- 1 Barbed Wire Sharpener
- 1 The Puck (dual grit sharpener)



- 1 Firesteel Fire starter
- 1 Button Compass (on the handle of the Firesteel)
- 1 550 Paracord bracelet (8 feet)
- 1 Min. survival guide



Lansky
Tactical Apocalypse
Survival Kit



APPROXIMATE DIMENSIONS
19 in. H x 10 in. W x 7 in. D



WEIGHT
6 to 10 oz.



PRICE
\$200



URL
www.lansky.com

Nitro Pak**Urban Survival-Pak Level 1**

For those who require a smaller, less noticeable bug-out bag that packs a defensive punch, the Urban Survival-Pak (USP) is right up your alley. This over-the-shoulder bag conceals its true usage, which comes in handy when you don't want to broadcast to the world that you're carrying a whole stash of supplies. The bag comes with an interesting mix of gear, many of which lean heavily toward personal defense. It includes more than a few defensive tools, including pepper spray (where allowed by law), swimmer's goggles for tear gas eye protection, and two sets of handcuff keys. Carrying this theme further, the bag includes an ambidextrous holster hidden inside a special weapon compartment for concealed carry of a handgun.

The USP is on the smaller side, so it's only natural that the amount of supplies it carries is less than that of the larger bags in this guide. The point of this bag is to get you in and out of areas a bit more ninja-like with a certain level of protection at your disposal. Think less Bear Grylls and more Jason Bourne.

It's made of ballistic nylon with a comfortable, fully adjustable padded carrying strap. It has an oversized and adjustable center compartment with nylon drawstring and multiple exterior pockets, including one that can secure a water bottle.

That brings us to a few highlights, which include a McNett Tactical Aquamira Water Filter Bottle that treats up to 100 gallons and removes 99.9 percent of chlorine, bad taste and cryptosporidium and giardia (parasites that cause "beaver fever"). It also includes a quality Gerber Suspension Multi-Tool, a couple of emergency food bars and water packets. A rudimentary first aid kit is included as is a radio and emergency blanket. Although one of the priciest in this guide and not built for sustained survival, for its size the USP has the potential to get you out of a jam and to your rendezvous point quickly.



6 FEET

**MAKE & MODEL****Nitro Pak**
Urban Survival-Pak
Level 1 (item #5800)**EXTERIOR SIZE (L x H x W)**
13 in. H x 11 in. W x 7.5 in. D**WEIGHT**
8 lbs.**PRICE**
\$328**WEBSITE**
www.nitro-pak.com

- 1 Gerber Suspension Multi-Tool
- 1 2-oz. pepper spray (substituted with a knife in states not allowing pepper spray)
- 1 Swimmer's goggles
- 2 N95 respirators
- 1 Sadecon tear gas decontamination wipe
- 1 Lead On Tools Exhumers Multi-Function "Tool"
- 1 Tactical Spiked Kubaton Self-Defensive Tool with writing pen and pocket cap
- 1 Self-defense power punch key, no. 6 "tool"
- 1 Pair of nylon covert rubberized gloves
- 1 Covert black six-way wearing ball cap
- 1 Personal alarm and door alarm attachment with 9-volt battery
- 2 Handcuff keys, standard and covert
- 4 HD Black 16-in. zip ties
- 1 Rear viewing covert "sunglasses"
- 1 Single-side razor blade
- 1 Pair of foam earplugs

- 1 McNett Tactical Aquamira Water Filter Bottle
- 2 Purified Water Pouches (4.2 oz.)
- 2 400-calorie emergency food bars
- 1 Lifesaver roll
- 1 US Military Medical Wound Bandage
- 2 Germ-X Antibacterial Wipes
- 2 Antiseptic Wipes
- 2 Ibuprofen (200 mg)
- 1 Triple antibiotic ointment
- 1 Fabric knuckle bandage
- 2 Fabric adhesive bandages (1 x 3 in.)
- 1 Safety pin
- 1 DryWipe waterproof pouch

- 1 Survival Whistle with breakaway lanyard and SLIM Rescue Howler Whistle
- 1 6-foot folded duct tape
- 1 AMK mini roll duct tape (2 x 26 in.)
- 1 Liquid-filled button compass
- 1 550 paracord wristband (10 feet unfolded)
- 1 Dental floss
- 1 SOL Survival Instructions

- 1 SOL tear-proof emergency blanket (56 x 84 in.)
- 1 LED flashlight with battery
- 1 Red flashlight plastic form with two rubber bands
- 2 Hand warmers
- 1 Scripto butane lighter
- 1 Fire Tite Fuel One-Handed Fire Starter
- 4 Tinder-Quik Fire Starting Tabs
- 1 Coby Compact AM/FM Radio with batteries
- 1 Ride in the Rain Waterproof Note Pad
- 1 Writing pencil
- 3 Wet wipe alcohol
- 2 Compact toilet tissue roll

Echo-Sigma Get-Home Bag

Echo-Sigma is a husband-and-wife team that got into making emergency kits because they couldn't find kits that suit their needs. Since starting up only four years ago, Echo-Sigma has quickly made a name for itself as a producer of quality disaster preparedness kits. A big draw for Echo-Sigma is its use of top-quality products and highly customizable options for most of its offerings. Its signature item, the Get-Home Bag, has made a splash in both the mainstream public and niche survival realms for allowing customers to select what they want in their bags so that they're not stuck with gear they'll just toss aside.

The Get-Home Bag is a mid-sized disaster preparedness kit that features eye, mouth, and hand protection, as well as fire-starting and water purification capabilities and much more. The backpack is rugged and built to take abuse. It offers decent support with both sternum and hip support straps and a comfortable padded back. It's not very large so every cubic inch of it is used to carry gear and supplies. Our featured sample bag even has an axe hanging on its exterior. It can easily find a home under your desk at work or in the trunk of a small car.

If saving time is the main motivator in your decision to purchase a go bag, you'll want to take a long, hard look at this pack. It may not be the cheapest one around, but it does allow you to choose what tools come with it.

The level of customization is uncommon in this genre. Select from four kinds of multitools, five models of flashlights, multiple types of knives, and even a couple of pressurized hydration systems. The bags come ready to go; there is no need for removing packaging from individual items. All the included products are arranged, organized, and stowed for fast and easy access in case of an emergency.



MAKE & MODEL Echo-Sigma Get-Home Bag

Dimensions 18 in. H x 9 in. W x 13 in. D

Weight 15 lbs 14 oz

Price \$425 (as configured)

URL www.echo-sigma.com

- 1 Hydration System (2.5 liter)
- 1 Echo-Sigma 13 Day Provision Pack with MRE (optional)
- >1 Meal, Ready to Eat (MRE)
- >3 Food ration bars
- >1 Drinking water (1.75 liters)
- >1 Paper napkins



- 1 Echo-Sigma Compact Survival Kit
- >1 Compass
- >1 Emergency whistle
- >1 Emergency blanket
- >1 Butane disposable lighter
- >1 Magnesium fire-starter with flintstriker
- >1 Duct tape (50 in.)
- >1 Bottle of water purification tablets
- >2 Chemical light sticks
- >1 Emergency firestarter
- >40 Waterproof matches
- >2 Ballpoint pens
- >1 Pad of paper
- >1 Set of earplugs



- 1 Echo-Sigma Compact First Aid Kit
- 1 SOG B63 Power Lock EOD Mat Tool (optional)
- 1 Waterproof LED Flashlight by Fenix E26 (187 lumens)
- 1 SOG Fasthawk (optional)
- 1 Midland ER200 Multi-Power Radio (optional)
- 50 Feet of military-grade 550 paracord
- 10 Extra large zip ties

- >1 Emergency tube tent
- 1 Emergency Poncho
- >1 Plex glass mirror
- 1 Thermal sleeping bag
- 6 AA batteries
- >1 Pair of leather work gloves
- >2 N95 rated respirator masks
- >1 Pair of protective goggles
- >2 Hand warmers

Are Off-the-Shelf Bug-Out Bags Right For You?

By Martin Anders | Photos by Michael Grey

Life is hectic enough. Working, running errands, picking up the kids, fixing that leaky faucet — there's a never-ending to do list. Try compounding that daily grind with formulating an emergency plan based on a to-be-determined life-altering catastrophe of unknown origins can be overwhelming to say the least. But if you're reading this magazine, it means you're responsible enough and have enough foresight to make disaster preparedness a priority.

So, is there a way to balance everything going on in your life to find the time to get ready for what may come? Well, you're in luck. There's an entire industry dedicated to convenient preparedness.

You probably have already seen the products while surfing the Web, shopping at your local big box store, or flipping through the advertisements in these pages. Readymade emergency supplies seem to be popping up everywhere, especially as of late. The concept of saving time and money by buying a prepackaged kit is one that we appreciate, but how do these products really stack up? Based on their persuasive packaging, all these kits sound convincingly useful, but are the kits full of things that you'll never need or packed with tools that don't work well — or at all?

Let's set the record straight. We at OFFGRID believe that the best kits, particularly go-bags or bug-out bags (BOBs), are the ones that you assemble yourself. You are the only one who knows best what you and your family's needs and preferences are. You know your terrain, climate, community and what type of disasters that your area is prone to. Only you know your disaster plan, where you will bug out to, and other contingencies. Companies that offer prepackaged survival kits do not know any of these factors. They can only estimate what people will need.

We do, however, like the idea of readymade bags as a starting point because of the time saved on piecing one together from scratch. But for off-the-shelf BOBs to work, you'll need to further customize them to suit your needs. While they can save you time, it's a long shot if they'll save you money, as you'll no doubt need to dump some products to make room for personalized items like medications, extra batteries, your favorite tools, or specific foods (in case you have allergies or a certain palate).

And don't forget the bag itself. Will it hold up to the rigors of survival? How does it feel on your shoulders on a hike? If it won't last, ditch it and get a sturdier, more comfortable one. (See OFFGRID's premiere edition, the Summer 2013 issue, for more on how to select a survival backpack.)

Due to the vastness of the market and considering the limited pages allotted for this article, we examined a limited number of preassembled go-bags of varying budgets, sizes, and uses. Before spending your time and money, take a closer look at the following buyer's guide and see if there's a ready-made bug-out bag that could serve as a starting point for your own BOB build.



Nitro Pak**Executive 72 Hour Survival Kit**

This survival kit covers the basic needs for two people for about three days. It has water food (in the form of rations), basic tools (like a flashlight, radio, and multitool), work gloves, and even a tent. This Nitro Pak kit includes with a water filter straw—always handy in any survival situation. The nylon backpack itself comes in bright day glow orange for easy spotting, which can be a good or bad thing depending on the situation. (Good if you're stranded and need to be rescued. Bad if there's lawlessness and marauders are looking for easy targets.)

The kit includes a large selection of compact sized survival items that cover a variety of needs from warmth and shelter to food and first aid. Most of the items seem to be from reputable companies or of standard or better quality. Our concerns are with the bag itself. The shoulder straps seem rather thin and spaced closely to one another, which doesn't seem to be a comfortable way to carry 17 pounds (plus what you add to it) on your shoulders.

This bag's interior is rather large and has plenty of space for you to add more stuff. It has a good selection of small items, especially in the basic needs categories. If we were to use this as a base to build our bag, we would add a more potent primary flashlight and use the one included as a backup. Same thing goes for the multitool, which doesn't seem as capable as others that we've handled before. We would also add a headlamp and some spare clothes. But if you need a secondary or tertiary bag, this might fit the bill just as is.



NEWLY REDESIGNED

Nitro Pak**Executive 72-Hour Survival Kit**
(Item #5808)

16 in H x 16 in W x 12 in D

**WEIGHT**

17 lbs

**MSRP**

\$175

**URL**

www.nitro-pak.com



- 2 SPACE Brand Emergency Blankets
- 2 Emergency rain/wind ponchos
- 2 Hand/pocket warmers
- 1 Frontier water filter straw
- 2 Compact sanitation/toilet tissue packs
- 2 Compact facial tissue packs
- 1 Deluxe AM/FM radio with batteries
- 1 Writing pad, pencil, and ink pen
- 1 Deck of playing cards



- 60 item first aid kit with instruction book
- 1 Bag of hard candy
- 6 Emergen C vitamin packets



- 2 3,600-calorie cookie-flavored ration bars
- 24 Purified drinking water pouches (4.2 oz each)



- 1 Deluxe heavy duty tube tent
- 1 50-foot nylon cord
- 1 Pair of leather gloves
- 1 Box of waterproof matches (45 sticks)
- 1 Industrial flashlight with batteries
- 1 12-hr instant light stick
- 1 36-hr emergency candle with three wicks
- 2 N95 hospital-grade dust masks
- 1 Emergency survival whistle
- 2 Disposable sanitation bags
- 1 Trash bag
- 1 Pocket knife
- 18 Wet wipe packets

KIT INCLUDES:

WATER FILTRATION KIT



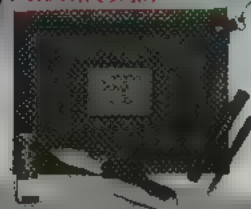
POWER KIT



HYGIENE KIT



CIVIL UNREST KIT



EMERGENCY & SURVIVAL GEAR

ESSENTIALS ALL-IN-ONE KIT LIFE-SAVING SUPPLIES YOU NEED TO SURVIVE A CRISIS

- Drinking water purification
- Power charging & storage for lights, radio, phone
- Personal hygiene for 3 days
- Non-firearm personal defense

and more... for anywhere. Limited backpack.

ITEM #080-001-128 \$379.99



EMERGENCY & SURVIVAL GEAR

PREPARE. EQUIP. SURVIVE.

BROWNELLS.COM/ESG • 800-741-0015

Source Code: PET

WHERE PREPAREDNESS MEETS RESERVATION



FREEDOM MUNITIONS



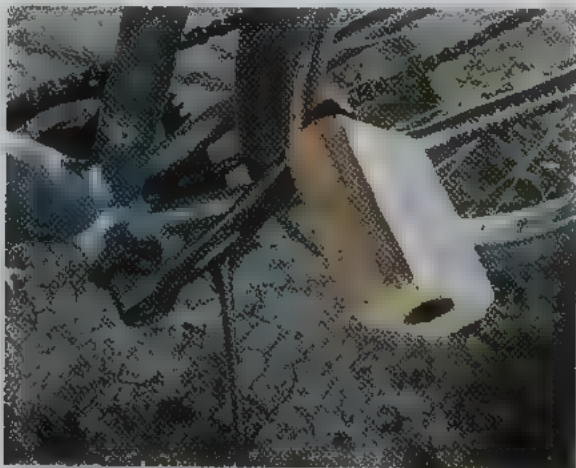
GRAB BOB AND GO



line between looking too clean and healthy (thereby making oneself a target for the have-nots) and looking totally destitute (making one a target of those who prey upon the weak while also unapproachable to those who might be willing to offer help). Depending on the type of disaster you find yourself in, money might still be worth something. If you are displaced to an area not under distress, you may be able to work for cash, so you need to be approachable. If money is not worth anything, you can still trade your labor for things you need, which many of the homeless do. A general consensus was that begging or panhandling was not very effective, so you can't rely on handouts.

Another survival concept consistent among the homeless was the value of having cheap transportation—namely a reliable bicycle. Those homeless who owned a bicycle had a distinct advantage over those who didn't. Every street person we interviewed eyed our bicycle with envy and all mentioned the importance of one. Why? Fuel may not be available, and roads are easily clogged by panicked motorists—but bicycles can go almost anywhere with nothing more than a little leg muscle. Plus, they're easy to hide or secure and allow a person to travel great distances quickly while expending little energy. These attributes allow one to obtain resources from farther away and help you get out of harm's way swiftly. The impoverished who owned bicycles also had a lock (preferably a U-lock), a small set of basic tools, and spare parts to keep their bikes reliable. One man suggested having a small bicycle trailer for hauling additional supplies and gear. (See OFFGRID's Spring 2014 issue for more on bug-out bikes and their accessories.)

Learning how to adapt is also strongly suggested. For example, the older man replaced a broken pedal with one fabricated out of a wooden block. If you find yourself off grid, improvisation will be used in every aspect of your life, not just those regarding your bicycle.



Lesson Learned

» About Medical:

Prepare some basic medical gear and know how to use it. Know where alternate medical facilities are (as hospitals might be overcrowded, overrun, or quarantined) and plan transportation routes to reach them. Also, if you have elderly relatives to care for, you'll need to plan accordingly.

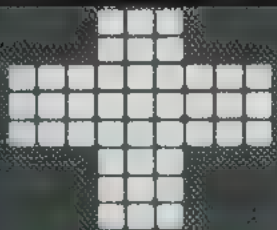
» About Hygiene:

Not only does improper hygiene cause medical issues to flare up, it can also mark you as a target. Don't look too clean, but don't look completely destitute either.

» About Transportation:

Off the grid, bicycles are king. Without the need for fossil fuels or electricity, bikes can get you out of Dodge quickly and via many different routes.





How to Help

Aside from getting a chance to learn how impoverished people live on the streets, you can volunteer at a homeless shelter or a nonprofit organization for plenty of other personally rewarding pros. Here's a brief list of services and word assistance and information.

Invisible People

This nonprofit's founder used to be homeless and is now a volunteer. He is changing the way we look at homeless people and the system.

www.invisiblepeople.tv

National Coalition for the Homeless

A national network of activists, advocates, and professionals. Goal is to organize and add to the homeless.

www.nationalhomeless.org

Project Night Night

This charitable organization provides shelter and food for homeless people.

www.projectnightnight.org

U.S. Department of Housing & Urban Development

This department provides housing and financial assistance for low-income families.

www.hudexchange.info

Veterans Affairs

The U.S. Department of Veterans Affairs provides housing and financial assistance for veterans and their families.

www.va.gov/homeless



Survival Priority: Backpacks

That's right. You read correctly — backpacks. We know how much you love them, so listen up. Topping the list of needs of the homeless is the backpack. The general consensus is that if you want to keep something, it should be kept on your person. Think vital items like your ID, cash, payment cards, and weapon(s). Depending on the situation, these items can give you access to resources such as your bank account or government assistance should you be able to reach it. These belongings are a most impossible to replace in a disaster scenario (Also, should there be some semblance of law and order you'll want your CCW permit handy if you're carrying a weapon concealed).

To carry all of your other needs, you should have a good quality, low-profile, medium-sized backpack. That

means it should appear used and somewhat dirty. A huge pack that's glistening new with all kinds of goodies hanging off of it will definitely make you a target. Many of the interviewees related instances in which they were robbed. Others recalled how they often sleep with an arm through one of their pack's straps.

We asked all four interviewees, "If you could have a backpack filled with anything but cash and crack/cocaine, what items would you want in it?" Not surprisingly, the 5 C's popped up in everyone's answers: a container for water, a cutting implement (such as a knife), cover (e.g., a tarp, tent, or sleeping bag), cordage (to secure items and make shelter), and a form of combustion (usually a lighter though fires were seldom used because they attract attention).

In addition to the other items previously mentioned by the interviewees, some of the vagrants expressed interest in having a flashlight, a small radio, extra warm layers, extra footwear, extra set of clothes, writing implements, baby wipes, a small stove, and cooking and eating utensils. These are typical items most survivalists would have in a 72-hour go bag.

Lessons Learned

About Backpacks:

Few things are as essential as a good backpack, because it can carry all of your other vital kit (water, food, fire starters, etc.). Find one that's medium-sized and low-profile to stay discreet, load it up, and keep it close to you at all times.

Takeaways

In addition to the critical gear already mentioned, many of the drifters we talked to suggest having things you can part with. Barter items — namely cigarettes, alcohol, and drugs (legal and illegal) — would be valuable to have in limited quantities so that you can trade with others you deem safe to negotiate with. (Obviously, the severity of the disaster and the condition of the government should be taken into consideration before obtaining anything illegal.) For example, if you're not a smoker, trading away a pack of cigarettes for creature comforts like toilet paper would be a huge morale booster.

All of the people interviewed for this story were visibly nervous. Life on the streets is quite stressful, and being properly prepared can reduce that stress in times of peril. These interviews gave us a small glimpse into what a future living off of the grid would be like.

We've certainly taken their lessons seriously, cross-referenced them against our own preparations, and

have adjusted our plans for TEOTWAWK accordingly. We suggest you do the same, because it doesn't take much for average folks to end up on the streets — whether it's due to a sudden psychological affliction, the economic fallout of being fired, or a natural or man-made catastrophe that wipes out your community. ☐

About The Author:

Peter Palma is a freelance writer who served overseas as an infantry machine gunner and scout sniper in the U.S. Marine Corps. After leaving the service, he competed on TV's *Top Shot* during its first and fifth seasons. He currently resides in Louisiana, where he teaches basic firearms classes, is enrolled at Louisiana State University, and operates his weapons-clearing accessory business, MS Clean.



Primary Needs: Food, Water, Shelter, and Security

There's a lot of community support for the homeless. Most of their basic needs are met by local churches or shelters. But as you'll read later, these handouts may not always be an option. Though every interviewee survived differently, there were definitely some common themes.

Most everyone had a water container that they would refill by using hose bibs attached to businesses closed for the day. The types of food that they carried were nonperishable and prepackaged, and therefore didn't need to be refrigerated or cooked. When asked if they would steal food if the community could not provide it, the answer was a unanimous yes.

Thoughts on the subject of shelter varied greatly depending upon the situation and the individual's temperament. Some street people find clean beds at community shelters, but there's always more demand than supply. Also, people entering a shelter (or a FEMA camp) will be subject to a search, so those not wanting to give up firearms, other weapons, and possibly medication will have to seek shelter elsewhere. Many of the homeless interviewed disliked the shelters because of the overcrowding and thievery—undoubtedly two problems that would be compounded in a disaster situation.

A partially disabled 63-year-old man we interviewed constructed a small encampment hidden deep in a wooded region, located far away from the densely populated homeless district. He chose this type of area to stay away from others competing for resources. But he also chose to set

up his camp near train tracks because snakes common to the area dislike the strong vibrations created by passing railway cars. Being so far from resources required him to own and maintain a bicycle for transportation.

Meanwhile, a man in his early 20s used a drastically different approach. He solely occupied abandoned structures, constantly changed his routes, and only moved under cover of darkness to avoid detection. However, his austere nomadic existence limited his possessions to what he carried in his backpack and on his person.

A middle-aged man occupied a tent within walking distance of community resources, but remained on the outskirts of the densely populated area.

One side of his "territory" was covered by a fence, while the others had a clear view of anyone approaching. In the colder months, he would move his encampment into the shelter of a nearby abandoned building. This man didn't try to hide his location, but kept his presence known, unlike his weapon, which was a rather sizable and rusty cane knife he kept hidden. He admitted to being a multiple felon, was an imposing figure, and had narcotics in plain view. People like this are already out surviving on the streets, so should you find yourself among them, we suggest being hyper-aware of your surroundings and distributing your trust sparingly.

person associated with a constant stream of trouble, including a nest of bees. This former gardener, however, is a defensive





Regardless of the type of shelter used, we noticed certain themes reoccurring throughout our interviews. Every man had some way of getting his sleeping area up off of the ground—be it pallets, a mattress, or bedding material. Also, they all utilized some type of early warning system to alert them of approaching danger while they slept. Some placed broken glass or trash in the pathways of buildings. Others tied trip wires in the woods or simply blocked entrances with materials that would be noisy to move.

Those who chose to stay with other homeless people actually used some “challenge words” or code—much like the Allies did during War World II’s D-Day when troops would challenge anybody approaching with the word “flash” and shoot if the password “thunder” wasn’t given in return.

Lessons Learned



» About Food:

Pack nonperishable foods; conventional cooking and refrigeration will be limited or nonexistent in a SHTF scenario. Consider purchasing meals-ready-to-eat (aka MREs), learning how to prepare your own canned food, or stocking up on commercially available canned food (see our “Meat Feast” feature story elsewhere in this issue).



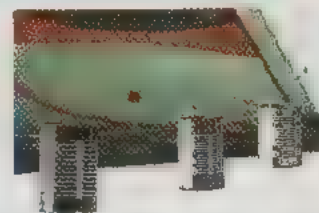
» About Water:

A container of some sort is a must for any survivalist, be it a plastic milk jug or state-of-the-art stainless steel water bottle (see OFFGRID’s Fall 2014 issue for more).



» About Shelter:

Because the location will depend on your specific situation and where you choose to set up camp, there’s no single “best” type of shelter. But a roof over your head and a bedding area elevated off the ground is essential.



» About Security:

In any dire scenario, be it homelessness or after a natural disaster, overcrowding is inevitable at shelters, whether set up by the government or charitable organizations, as is property theft. So, establish either a trusted network of friends (the kind your life depends on) or an early warning system around your shelter. Self-defense tools are a no-brainer.

Secondary Needs: Medical, Hygiene, and Transportation

Once the basic needs were covered, we delved into additional needs that are not so immediate but still quite important.

Medical attention is usually given out at clinics and hospitals, but what if there are none available? Or, as in the case with shelters, you don’t want to be forced to give up your weapons or medication? From our observations, the

alternatives aren’t so pretty. Most vagrants either self-medicated or simply suffered through the ailments. Also, living on the streets without medical support appeared to get exponentially more difficult with increasing age.

On a related note, proper hygiene could have not only prevented some of the infections and medical issues we observed, but it also could have served a secondary purpose of looking more presentable. And no, we’re not talking about dressing up for job interviews. There appeared to be a fine

**TESTER #1:
Patrick Vuong**

> At First Bite: It's Spam with a hint of East Asia, and saathered in a saline sauce.

> Overall: Who doesn't love this mystery meat? I only find occasion as a component of fried rice as a complement to eggs, or as the main ingredient in Spam musubi. So I figured the teriyaki version would be just as good. To my surprise it was really salty — and that's saying a lot for Spam. While it would be most agreeable with a generous amount of white rice, I probably stock my provisions with regular Spam and save this version for when I want to feel extra Asian.

**TESTER #2:
John Schwartz**

> At First Bite: Flavorful, but please don't pass the salt.

> Overall: Spam is something else. I can't remember the last time I ate outside of some Hawaiian cuisine that uses it. Mine was teriyaki, so had a bit more flavor than expected, but was really salty. Comparatively speaking it was pretty good. — the texture was firm and could be used as a nice grilled steak as filling in a sandwich, or chopped up and served with other things. This would be another I'd happily resort to if times got lean. Its versatile flavor and texture make it a worthwhile resource, and I may actually start using this more often to find new and exciting ways to make it taste good when mixed with other ingredients. Plus, I can sing the Monty Python Spam song while I'm cooking it as an added bonus.

**TESTER #3:
Martin Anders**

> At First Bite: It's a brick of meat, what's not to like?

> Overall: Stocking up on Spam in case SHTF is a no-brainer decision. Loading up on this teriyaki version on the other hand is questionable. It's surprisingly sweet, clearly a result from its very strong teriyaki flavor, but it also has an unusual aftertaste that the original flavor doesn't have. I can't say that I'm digging this version, but if you already have a five-year supply of original Spam, it probably wouldn't hurt to throw in a few cans of alternative flavors like this teriyaki version just to mix it up a bit.

> At First Bite: For those who've never tried canned tuna, it had a salty yet slightly sour texture followed by a "seafordy" aftertaste.

> Overall: If you're a low-carb nut or a fitness freak, you're probably well acquainted with this style of seafood. Some guys I know eat this straight from the tin for lunch — and nothing else. (Tuna is a storehouse of protein, which not only helps build muscle, but also keeps you feeling full longer — which is highly useful when rations are low.) I suggest eating it with veggies, rice, or crackers. We've long gotten used to canned tuna, so this portion of the taste test was fairly ho-hum. I'd rather have a plate of fresh tuna sashimi, but hey, preppers can't be choosers. I'd venture to guess that in dire circumstances, this tuna would be palatable enough for most people.

> At First Bite: Tolerable, but definitely not my first choice.

> Overall: For some reason I've hated canned tuna since childhood. I enjoy sushi or a nice grilled tuna sashimi, but can never get into tuna of this kind, so my evaluation is a bit biased. This is a good source of protein and nutrients, but my preference would direct me to other sources of canned nourishment if I had the choice. There's a lot you can do to jazz this up with mayo, onions, etc., but in a forced situation with nothing else to use I would likely be using this as a bandaging chip more than as a source of sustenance. My cat was happy to finish the majority that I couldn't, which also makes it a reasonable alternative pet food to keep your four-legged buddies going if there's nothing else to do.

> At First Bite: Very dry with a sour, tangy flavor.

> Overall: Sure, like myself a good tuna melt once in a while. When I took a mouthful of tuna straight from the can, I was a bit disappointed. This isn't what my tuna melt is made up of, is it? Its consistency is similar to overly cooked chicken, soaked in salt water. Can I eat this in a survival situation? Absolutely. Do I wish I had some mayo and other seasonings to add to it? Absolutely.

> At First Bite: This isn't my first time at the Vienna sausage rodeo — easily my favorite dead animal product of this taste test.

> Overall: Truth be told, I've been eating these little bad boys since I was a kid (though a lot less after realizing what goes into making them), so had zero inhibitions when cracking open the lid. These are basically mini hotdogs that you can eat straight up, throw into soup or stew, or douse in ketchup and mustard with some bread. Stock up on Vienna sausages without reservation, folks.

> At First Bite: Mushier than I expected, but had a nice flavor.

> Overall: I don't remember the last time I had one of these that wasn't saathered in barbecue sauce and served hot as some sort of Christmas party appetizer, so my palette was pretty objective. These were quite nice and something I'd definitely stock up on if food became scarce. They weren't too salty and had a nice flavor. I expected a firmer texture, but it wasn't so soft that it was gross. There are a variety of things you could eat these with (sauces, mixed with other items, as a side dish) that would make them a nice part of a complete meal. If you like hot dogs, you'd like this.

> At First Bite: Seven little piggies a thermus in a can.

> Overall: A childhood favorite of mine, the Vienna sausage is the younger cousin of the hot dog. By no means is this a gourmet food, but it is enjoyable to eat — especially when you're hungry. I do like the fact that it comes in a small, portable can. They're painless to carry in a bug-out bag or cargo pant pocket and easy to open when it's time to eat.

THE 1990S

by Reflex Action



Spam

MAKE & MODEL
Hormel
Spam Teriyaki

NOTABLE INGREDIENTS
(Not a complete list) Pork with fat, modified potato starch, sodium nitrite

SIZE
12.5 oz



Tuna

MAKE & MODEL
Chicken of the Sea
Chunk Light Tuna In Water

NOTABLE INGREDIENTS
Chunk light tuna, water, vegetable broth (contains soy) salt

SIZE
5 oz



Vienna Sausages

MAKE & MODEL
Armour
Vienna Sausage Original

NOTABLE INGREDIENTS
(Not a complete list) Mechanically separated chicken, water, salt, corn syrup, sodium nitrite

SIZE
4.75 oz



Crab Meat

MAKE & MODEL
Crown Prince
Crab Meat

NOTABLE INGREDIENTS:
(Not a complete list) Crab
sodium acid pyrophosphate, sodium
ATA, sodium metabisulphate

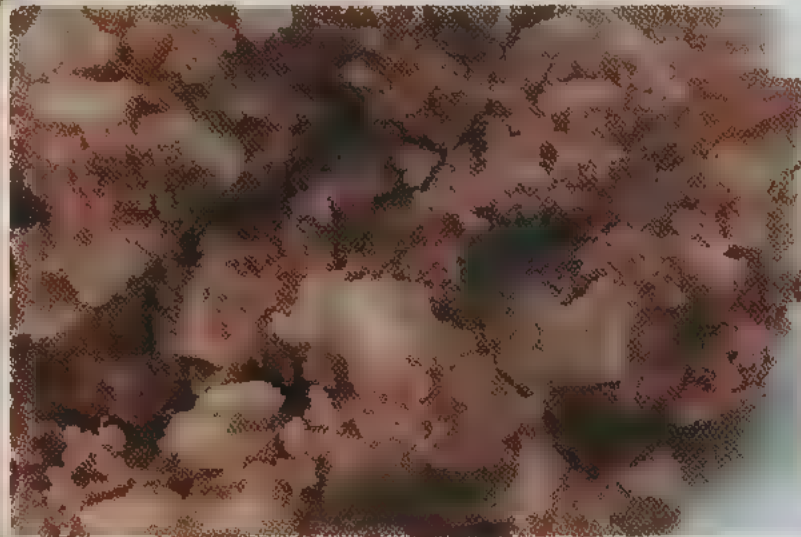


Corned Beef Hash

MAKE & MODEL
Hormel
Mary Kitchen
Corned Beef Hash

NOTABLE INGREDIENTS:
(Not a complete list) Beef,
rehydrated potatoes,
water, salt, sugar, sodium
nitrite

SIZE
25 oz



Deviled Ham

MAKE & MODEL
Underwood
Deviled Ham Spread

NOTABLE INGREDIENTS:
(Not a complete list) Ham, cured w/ th water, salt,
brown sugar, sodium nitrite

SIZE
4.25 oz





MEAT FEAST

Tasting Canned Protein — Vegetarians Need Not Apply

By Martin Andersen
Photos by Michael Grey

If you're a survivalist, you know your canned food. You've got it stashed away in your basement, your attic, or your garage. You've got it in your car, your truck, or your boat. You've got it in your home, your office, or your school. You've got it in your kitchen, your dining room, or your living room. You've got it in your bedroom, your bathroom, or your closet. You've got it in your car, your truck, or your boat. You've got it in your home, your office, or your school. You've got it in your kitchen, your dining room, or your living room. You've got it in your bedroom, your bathroom, or your closet.

Food chance you'll find it turned into portable meals in a can to be enjoyed for years. In a long-term survival situation, canned food can not only provide nutrition, but also offer a boost in morale when times look desperate. But have you actually tasted the canned food? Our intrepid editors at OFFGRID are putting our palates—and our digestive tracts—to the test. We're looking for the best of which meats are treats and which ones are just food. We're looking for the best of which meats are treats and which ones are just food. We're looking for the best of which meats are treats and which ones are just food. We're looking for the best of which meats are treats and which ones are just food.

Practice

Boiled Oysters



NOTABLE INGREDIENTS.

Who e oysters, water salt



SIZE

Box.



INDEX

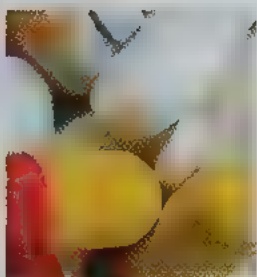
Internal

Hong Kong Film Award Best Actor



NOTABLE INGREDIENTS





have a family. Be aware that Tamiflu is most effective when taken within 48 hours of initial symptoms. Tamiflu still requires a prescription, but if you have some left over from a previous prescription, hold onto it. The shelf life, when stored properly

at room temperature, has been tested, and the drugs shown to be effective even six years after the stated manufacturer's expiration date.

Fending Off Fungi: When dealing with severe fungal infections, having Fluconazole (also known as Diflucan) in your arsenal is a must. This anti-fungal medicine is used to cure a wide range of fungal diseases, such as those you might find in soil like coccidioidomycosis ("valley fever"). For the female preppers out there, Fluconazole is also highly effective in treating yeast infections, but is unfortunately completely ineffective in getting your male counterparts to put the toilet seat down after use.

Bacteria Buster: Due to the vast assortment of bacteria, there is not one omnipotent antibiotic that can kill all of them, so deciding amongst the gamut of available antibiotics used to treat bacteria can be daunting. Maintaining a selection of a few antibiotics that overlap in treatment targets will ensure that you have most of your bases covered (see the table below).

| Antibiotic | Human Use | Fish Use | Notes |
|-------------------------------|-----------|-------------|---|
| Clindamycin | N/A | Fish Clin | <ul style="list-style-type: none"> › Anthrax › Dental, bone, and joint infections › Tetanus |
| Ampicillin | N/A | Fish Cillin | <ul style="list-style-type: none"> › Ear infection › Strep throat › Used as a general purpose antibiotic |
| Ciprofloxacin | Cipro | Fish Flox | <ul style="list-style-type: none"> › Anthrax › Respiratory infections › Urinary tract infections |
| Trimethoprim/sulfamethoxazole | Bactrim | Fish Sulfa | <ul style="list-style-type: none"> › Gastrointestinal infection › Pneumonia › Urinary Tract infection |
| Metronidazole | Flagyl | Fish Zole | <ul style="list-style-type: none"> › Giardia › Helicobacter infections |
| Doxycycline | N/A | Fish Doxy | <ul style="list-style-type: none"> › Anthrax › Lyme disease › Malaria › Pneumonia |

3 Facts About Bacteria

1) Tap water generally has a shelf life of six months. Afterward, its chlorine additives begin to dissipate and bacteria and algae start to grow.

2) Mobile phones have 18 times more bacteria than toilet handles.

3) Bacteria cells in the human body outnumber human cells 10 to 1.

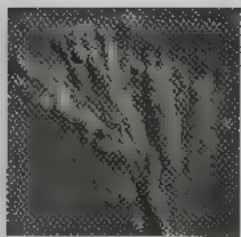
The use of antibiotics must not be abused, and should be kept to a minimum if at all possible. Misuse of these drugs can create resistant strains of bacteria that are untreatable and highly lethal. Thus, if you decide to amass a cache of antibiotics, you must be thorough in researching the appropriate use and dosage for each specific antibiotic. Since normal antibiotics can only be acquired through prescription, acquiring them can be difficult if you're not actually sick. Antibiotics in powder or tablet form are available without prescription for fish and aquatic life through commercial vendors. While you might not have scales and fins, and these antibiotics might not have been manufactured for human use, sustainable off-grid survival can sometimes depend on obtaining such medications in any shape or form.

Preparing for microbial organisms may not be on top of your list when planning for SHTF situations, but overlooking them can have truly fatal consequences. By practicing proper sanitation procedures and using the right medicines for specific infections, your body can focus its physical resources on the grueling task of surviving any disaster it faces. But be aware—there's still no known cure for zombie infections. ☠

About The Author:

Curt Lang studied microbiology and molecular genetics and is currently doing research to improve treatment for patients with brain and neural cancer. When not experimenting in the laboratory, he is an avid triathlete, photographer, and outdoor adventurer. He's spent countless hours honing his survivalist skills.





Fungi: Another infectious organism that can be readily found among us is fungus, which includes yeast and mold. Fungus can be multicellular as well as unicellular. Some fungi produce spores that can travel in

the air for long distances and remain alive for several years until prime conditions allow them to grow. These properties make it tough to completely eradicate spores from a dedicated area. Most fungi will not cause bodily harm, and some are used to make delicious goodies like God's gift to the world, beer. However, there are a few that can be detrimental to your health if you aren't prepared to treat it.

Equals a Pound of Cure

The best way to deal with all these germs is prevention, and one effective method is to block the routes of transmission. Because the spread of the germs may come from inhalation, ingestion, and direct contact, here are some precautions to consider.

Sanitize: One of the most important steps in prevention involves cleaning all areas where you live, work, or hole up in. Maintaining a sanitized environment not only minimizes the numbers of microbes around, it also reduces the amount of habitable areas that can become a breeding ground for germs.

Surfaces can be scrubbed down with a solution of bleach (which contains chlorine, a highly effective germicidal agent). If you are using normal household bleach, which is normally between 5.25 and 8.25 percent chlorine, a mixture of 1 cup of household bleach with 5 gallons of water should be effective in killing bacteria and viruses. For areas where you

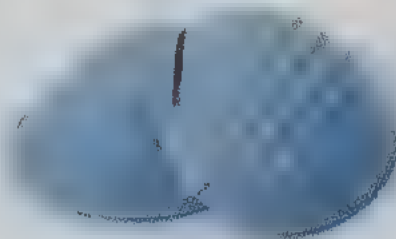
Alcohol is flammable, so more precautions must be taken around open flames. >

suspect a mold infestation, it is recommended to use a ratio of 1 cup of household bleach to 1 gallon of water. The use of a 70-percent solution of alcohol as a germicidal agent is also a recommended alternative, though the downside is its higher cost compared to bleach. Plus, alcohol is flammable, so more precautions must be taken around open flames.



Sterilize: Speaking of alcohol, a key advantage (other than turning you into the life of the party) is that it can be used to sterilize any scrapes and cuts on your body. When dealing with any break of the skin and vasculature,

it's essential to maintain sterility around a wound and to prevent germs from entering the blood system. Likewise, you should consider stocking antibiotic ointments and antiseptic creams in your first aid kits, which you should have at home, in your car, at work, in your bug-out bag, and stashed in your fallout shelter.



Gear Up: Handling and contact of blood from another person should be done while wearing protective gear. If available, such as gloves and face mask. If no protective gear is available, then take extra precautions to avoid

Protecting your mouth, nose, and lungs can be crucial to your overall survival in a disaster situation.

direct exchange of blood with any open cuts and wounds that you may currently have. Covering your mouth and nose with a towel or shirt will help prevent larger droplets from entering your respiratory system. Several dangerous viral diseases are spread through infected blood, such as hepatitis B, hepatitis C, and HIV.

Protective gear isn't just for handling blood. Lower respiratory infection is the fourth leading cause of death in the world, so protecting your mouth, nose, and lungs can be crucial to your overall survival in a disaster situation. Simple surgical masks or painting respirators can provide some degree of protection for non-infected users. Conversely, they can impede the spread of germs by preventing an infected person from releasing aerosols of infected particles into the air. Keep in mind that these basic masks aren't specifically designed to protect the wearer from inhaling pathogens.

That task is usually reserved for specialized respirators, which can be commercially purchased. If nothing else, having everyone in your group of survivors wear masks might just help ease the eye strain of having to look at your less aesthetically pleasing teammates.





Cook and Filter: Ingestion of microbes can be prevented by cooking all meats and vegetables to a temperature of 165 degrees Fahrenheit, which should kill any bugs in your food. When eating fresh fruits and vegetables, make sure they are washed thoroughly with clean water. (See "Pick Your Poison" in OFFGRID's Fall 2014 issue for more info.)

During times of strife, clean water might not be readily available. However, boiling your water before use and implementing commercially available water sterilizers and treatment tablets, which every survivalist should have on hand, can kill most of the germs in questionable water. Some sterilizers work through filtration, while others use ultraviolet light to kill the waterborne germs. Another option would be to sanitize your water for consumption using bleach. This treatment involves adding 1 teaspoon of bleach to every 5 gallons of water, making sure the bleach is mixed evenly, and letting it stand for an hour before use.



Vaccinations: The simple task of staying updated with your vaccinations can give you a lifetime of immunity from several nasty diseases. Most vaccines are administered at an early age and require no further inoculations after the initial one. That

Cook all meats and vegetables to a temperature of 165 degrees Fahrenheit.

being said, the key vaccination for survivalists to maintain is the tetanus vaccination. Retaining tetanus immunity requires booster shots every 10 years during adulthood. Tetanus is a bacterium that releases a neurological toxin (one form is more commonly known as Botox, a friend to many a Hollywood star) that causes muscle spasms, lockjaw, and breathing problems. Due to tetanus growing favorably in iron when it oxidizes, the threat of accidental infection is higher around rusty objects. When you're bugging out, watch out for nails in old fences, metallic debris on the ground, and rundown railings in humid conditions.

Treatments

No matter how well you try to avoid infection, these pests will inevitably find their way inside your body. Luckily, our immune system is not alone in this fight; science has been able to create several drugs that target these intruders.

There are several anti-viral drugs, but only one is really relevant to stockpile in your bunker: Tamiflu.

Fighting Flu: There are several anti-viral drugs, but to date only one is really relevant to stockpile in your bunker: Tamiflu (oseltamivir phosphate). This drug is designed to fight influenza type A and type B, both of which can pack a mighty punch that can knock you off your feet for a few days. In fact, influenza can be lethal to the young, the old, and those who have compromised immune systems. Tamiflu can be used to alleviate or help clear this virus out of your system, so it would be wise to have it on hand if you

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Seek Aid: If you or a member of your party becomes sick or injured while traveling, see a doctor right away. How sick should you be before you go? Exhibiting flu-like symptoms, persistent diarrhea, urinary problems, vomiting, jaundice, genital infections, or skin rashes are obvious warning signs. If the nature of the injury causes an open wound, clean it immediately to reduce the risk of infection and seek qualified medical help. Assume and treat these situations as if they're an emergency.

The accessibility of medical attention may also be hampered by your situation. If you are on a flight or cruise ship, tell a crewmember as soon as possible and do not refuse a request to wear a surgical mask to cover your mouth and nose if instructed to do so. Other lives may potentially be at risk. Remember, the longer you just wait and hope for the best, the worse your condition may get, and it may begin to affect people around you. Don't be cavalier with your health. The sooner you act, the better your chances are.

Stay Calm: If you've received word of a disease outbreak in your area, panic is the purveyor of bad judgment. For instance, a malaria outbreak is a serious situation; however, malaria is spread through mosquito bites and is not airborne or contagious through direct human contact. Therefore, basic precautions—wearing clothing, insect repellent, staying indoors, etc.—are the best ways to deal with this type of problem until you leave the affected area.

Outbreak Defense: For diseases that are highly contagious, such as Ebola, your ability to remain safe is contingent on several things. "The first thing you should do upon hearing news of an infectious disease outbreak is to verify it. There's a lot of fiction out there and not a lot of fact," says Dr. Robert Quigley, regional medical director and senior vice president of medical assistance for international SOS. "Learn about the mode of transmission and learn what you need to do to mitigate your risk. If it's a serious enough outbreak, you've got to decide what you need to do to get out of town. Companies should have plans in place to protect and support their workforce, and they can be adapted to wherever the location might be and whatever the incident might be."

"At this moment in time Ebola is only transmitted by contact with an infected individual's bodily fluids, whether they're dead or alive," Quigley adds. "Bodily fluids include sweat, stool, saliva, blood, and vomit. Ebola is robust and can survive on surfaces, so it's possible you could put your hand down on a surface an infected individual had previously touched, even as long as 48 hours earlier and then you put your hands in your mouth and you could get infected that

Top

5

Ebola Myths

1. It's Airborne

It's not. Ebola has not been verified yet. Current evidence suggests it is spread only through direct contact with the blood or fluids of an infected person.

2. It's Spread Only By a Living Person

Not necessarily. Ebola can be spread by contact with the blood or fluids of a dead person. It can also be spread by contact with the blood or fluids of a person who has died from Ebola.

3. Certain People are Immune

Not all. Some people have different mortality rates. Death rates range from 25 to 90 percent. The disease is also more likely to be fatal in some people than in others.

4. Treatments are Available

There are no specific treatments for Ebola. Supportive care is the only way to help a person survive. This includes fluids, electrolytes, and other medical treatments.

5. A Vaccine is Right Around the Corner

No vaccines are currently available. A vaccine is being developed, but it is not yet ready for use.

SQUIRREL ON WOLFEIT

CONDITION: RED

way. Whether it's Ebola or not, always practice universal precautions of hygiene and wash your hands when you visit public places, don't put your hands in your mouth and cover your mouth when you sneeze. "We tend to take for granted what's getting people into trouble."

Infected? If you feel you've come in contact with Ebola or a disease that is so dangerous and/or easily communicable, the first thing you should do is report it to your local public health department so it can be managed. That organization will direct you where to go, because not all hospitals are equipped to deal with all diseases and conditions. "That first phone call is critical because if you are symptomatic and have been to West Africa or exposed to someone who has been there where the disease is prevalent, if you go into a communal area you could spread the disease," says Quigley. From that first phone call there needs to be a response plan that would limit the likelihood that you would expose anyone else. That would be orchestrated by the local department of health. The CDC may not have a lot of jurisdiction or presence in your location, but you may have to make an overseas phone call as well and report your condition. You would want to have access to our healthcare system so they could support you and manage your complications, since there are no specific medications for a condition like Ebola."

Top 5 Most Common Travel-Related Diseases

- 1) **Diarrhea:** This is the most common travel-related disease. It can be avoided with some forethought and proper hygiene. It is the most likely to contract while traveling.
- 2) **Skin Disorders:** Not a disease, but a common travel-related condition. It can be avoided with proper skin care and protection.
- 3) **Stomach Issues:** This is a common travel-related condition. It can be avoided with proper food and water choices.
- 4) **Sexually Transmitted Diseases:** These are common travel-related conditions. They can be avoided with proper sexual practices and protection.
- 5) **Traveler's Typhoid:** This is a common travel-related disease. It can be avoided with proper vaccination and protection.

Returning Home

When you return home, do not assume you or anyone in your traveling party is now in the clear. Many diseases have incubation periods that could last indefinitely, so if you become sick upon your return you may have become infected with an illness that didn't manifest symptoms during your trip. If you begin feeling sick upon your return, immediately seek medical attention and give your doctor full disclosure on where you were, for how long and what you did, no matter how embarrassing it might be. The only way to determine and treat what you might have is to be honest.

If you have spent more than three months traveling in a developing country, the WHO recommends scheduling a medical examination. Travelers who suffer from a chronic disease such as heart problems or diabetes should also be seen for a thorough checkup to avoid any additional complications after returning from a trip.

Be conscientious about your health and don't become complacent, hoping any ill effects will just go away by themselves. Time is of the essence. Be prepared, be alert, and be educated. Your best offense is a good defense. ■

SOURCES

Centers for Disease Control and Prevention > www.cdc.gov
International SOS > www.internationalsos.com
U.S. State Department > www.state.gov
World Health Organization > www.who.int



Analysis: A realistic assessment of your general health and ability to travel should also be addressed. Diet and exercise create a healthy immune system, so practice those basics regularly. If you or someone you're with is pregnant, you're old with a less-tolerant immune system, or whose overall health is weakened by a preexisting condition, all these factors should determine whether your travel is a wise decision or should be postponed. If it's nonessential, it is recommended that you and anyone traveling with you visit their regular doctor at least four to eight weeks prior to departing. Get a thorough checkup and seek advice about possible risks, required or recommended vaccinations and boosters, and other considerations to make.

Coverage: If you have medical insurance, a careful evaluation of your travel coverage is necessary. Travel insurance alone might not cover medical issues, so if you have insurance of that type, review the policy's stipulations. No matter if you are headed to Toronto or Mumbai, consult your medical insurance company about travel exclusions. Even things such as a car accident or laceration requiring stitches may not automatically be covered when traveling abroad.

Learn what your plan offers as far as emergency evacuation, medical care abroad, network locations, preauthorization for treatment, coverage for those with underlying medical conditions, and what activities might be considered high-risk (such as mountain biking) and possibly not covered. You may want to upgrade your coverage during travel periods if you discover there are more exclusions than you are comfortable with. If you're traveling on behalf of your company, abide by their policies and educate yourself on the care they offer their employees during emergencies on business trips.



Reconnaissance: Take the time to locate 24-hour, physician-backed emergency medical services near your region of travel. Also, finding U.S. embassies, consulates, and diplomatic missions located in your destination is a valuable commodity. Carry contact information (phone numbers and addresses) for these services with you during your travel. Leaving an itinerary listing where you'll be during specific

It's Not Just Ebola

It's not just Ebola, as the media attention lately suggests. It's also Zika, chikungunya, and dengue fever—at least if you're traveling to South America, Africa, or Asia. These diseases should be more well-known than they are, but they're not. They're not just for the tropics, either. New strains of dengue fever have been found in the United States, and the Centers for Disease Control and Prevention (CDC) has warned that the risk of Zika virus is increasing.

From the mosquito-borne diseases that have been spreading in the tropics to the ones that have been spreading in the United States, the CDC has warned that the risk of Zika virus is increasing. The CDC has also warned that the risk of chikungunya and dengue fever is increasing. These diseases are not just for the tropics, either. New strains of dengue fever have been found in the United States, and the CDC has warned that the risk of Zika virus is increasing. The CDC has also warned that the risk of chikungunya and dengue fever is increasing. These diseases are not just for the tropics, either. New strains of dengue fever have been found in the United States, and the CDC has warned that the risk of Zika virus is increasing. The CDC has also warned that the risk of chikungunya and dengue fever is increasing.

So, what's the deal? Well, the CDC has warned that the risk of Zika virus is increasing. The CDC has also warned that the risk of chikungunya and dengue fever is increasing. These diseases are not just for the tropics, either. New strains of dengue fever have been found in the United States, and the CDC has warned that the risk of Zika virus is increasing. The CDC has also warned that the risk of chikungunya and dengue fever is increasing.



dates with someone at home, such as another family member during your time abroad can also be a lifesaver. If you are stranded or unable to communicate during a certain portion of your trip, it will be easier to locate you and coordinate help.

Sign Up: Travelers can also register with the U.S. Department of State and companies such as International SOS, an organization that provides medical assistance, international healthcare, and security services. This registration can allow you to record information about your trip so you can receive travel alerts during your stay or a representative can contact and assist you in an emergency.

Backups: If you are dependent on medications, packing extra for your trip is advisable. You never know if these medications are available at your destination or if they could be tainted. Many organizations recommend carrying a medical kit. The contents of these kits vary depending on the destination and individual needs, and may require authorization from a physician (and other parties) if certain prescription medication or other specialty items must be carried, such as syringes. The WHO provides a list of recommended contents by visiting www.who.int/ith/precautions/medical_kit/en/.

Arriving at Your Destination

Hygiene: This factor is of utmost importance, especially when traveling. Regularly washing your hands can mean the difference between getting sick and having a safe trip. Be conscientious of how your own health may affect others: cover your mouth when you cough or sneeze. Hand sanitizer with a 60-percent or greater alcohol content is another great carry item if soap and water is unavailable. Thinking of going outside? Particularly in tropical areas where insects carry infectious diseases like malaria, wearing insect repellent is imperative. Keeping windows closed or well-screened can also prevent insect bites.

Food and Water: Low health standards for water and dining establishments may also be inherent to your area of travel. The CDC has country-specific tips for your destination that pertain to food and water standards. In developing countries, drinking bottled water or other carbonated drinks in cans or bottles may be preferable to drinking anything from the tap or fountain drinks with ice. Brushing teeth with bottled water is also advisable over tap water. Make sure any food you eat is well-cooked. Any fruits or vegetables should be washed in clean water or peeled before eating. Eating



salads as well as consuming unpasteurized dairy products is often discouraged. Do not eat what is frequently referred to as "bush meat." It can often be wild animals such as bats or monkeys that are notorious disease carriers, regardless of how well they're cooked. Food from street vendors is also not a good idea.

Risk Management: As a way, pay attention to local customs and laws and be respectful. Taking risks such as drinking too much alcohol also increases your willingness to engage in risky behavior. Become educated about your travel destination's infrastructure and problems that you may encounter. For instance, all cabs may look alike, but some may not be legitimate and could result in robberies or worse. Familiarizing yourself with reliable transportation methods as well as staying in a reputable hotel in a safe area are considerations that are overlooked all too often.



ADVANCED SURVIVOR

BEYOND THE BASICS

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- Medical Responsiveness
- Tactical Defense
- Self Reliance



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CONDITION :

RED

Contaminated Food

Business

W

current info

Knowledge: First and foremost, prevention is best handled
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I just stay in the hotel room and order room
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 What if that hotel room is on a cruise
 ship and you

? Yeah, right. You need to get food a

solidated important tips to put you

WARNING



“There is no such thing as tough, only the trained and untrained.”

How to Track a Tracker

As a teacher of this craft, I am often requested to provide a class specific to anti/counter tracking. My first response is this: If you wanted to defeat a sniper, what would you do? You would hire another sniper.

If you want to learn how to defeat a tracking threat, suggest you learn how to track first. There are many schools across the United States that can teach you how to track both man and beast. Once you learn how to track, the anti-tracking techniques you come up with will be limited only by your own imagination. ■

About The Author:

Freddy Osuna is the owner and primary teacher at Greenside Training LLC of Benson, Arizona. As a former USMC infantry squad leader and scout sniper, chief scout, Osuna is now providing some of the most innovative tracking training in the United States. His résumé includes being lead instructor for the U.S. Army Combat Trackers Course at Fort Huachuca and serving as combat tracking subject matter expert for the USMC's 2nd Marine Division.

Greenside Training provides training to military and law enforcement agencies worldwide and will be providing courses open to all in Southern Arizona throughout 2015. Osuna and Jon Boyd are the authors of *Index Tracking: Essential Guide to Training Man and Beast*. Osuna is now writing his second book that he promises will change the way people view tracking in America (release scheduled for summer 2015). Greenside's goal is to lead you to discover an awareness of your world you never thought possible, then weaponize it on the battlefield, the streets, a hunt, or in the boardroom.

Go to www.greensidettraining.com for more info.

How Joe Moves

Joe's movement is determined by two main considerations, speed and security. He moves only as fast as he can clear every covered and concealed position in front of him. Without the assurance that his next step is safe, he cannot proceed any further.

He has certain benchmarks to reach within his bug-out timeline, so efficiency and safety is key here. A trained tracker is sensitive to his environment. Joe's senses of vision, scent, sound, touch, and taste are aligned with his intuition, meaning that he senses more than most people because he has been trained to.

“Look, listen, and smell before you move, Joe.”

Joe will ultimately survive the initial fallout of this disaster and will do so without compromising his long-term survival location. He will thrive as a good student of his teachers. He will monitor every piece of dirt that yields a footprint in the immediate vicinity of the basecamp, giving early warning of possible threats. If needed, he will also track high-protein meat and provide for his people.

As a teacher of this craft, I am often requested to provide a class specific to anti/counter tracking. My first response is this: If you wanted to defeat a sniper, what would you do? You would hire another sniper.

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THE BALLISTIC BRONCO

What happens when you cross
a Gun Nut with a Dirt Head?

Find out when Fred Williams
from *Dirt Every Day* and Iain
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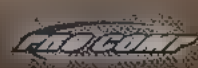
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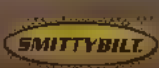
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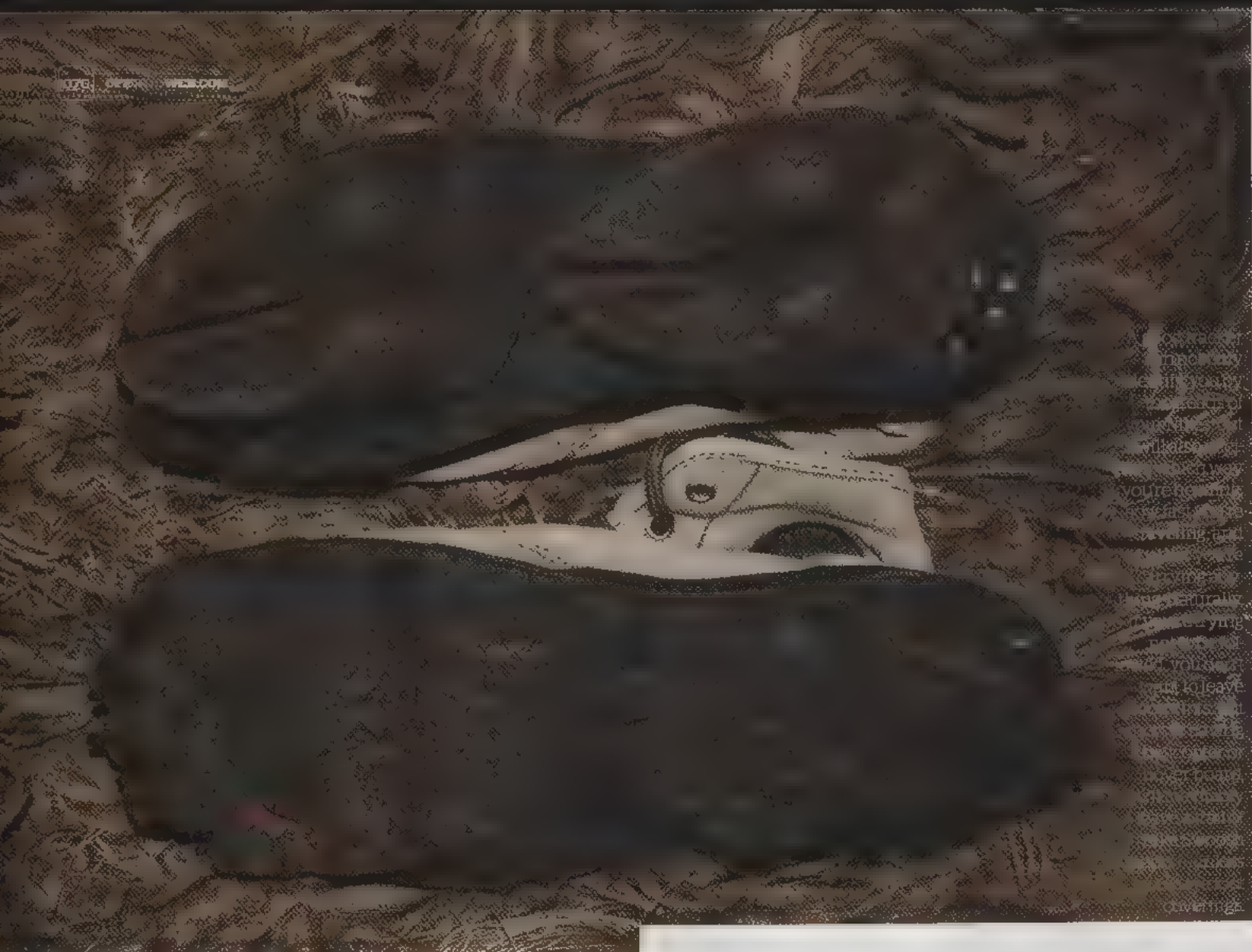


smittybilt.com



tnvc.com

DirtEveryDay.com
MotorTrend.com
4WheelOffRoadMagazine.com



Joe will move quickly by ATV, but leave a noticeable trail. Because of this fact, he will gain distance away from his starting point as swiftly as possible. Once at a safe distance, he will button hook, moving into a position from a 90 degree angle and then back out from the direction he came and cache the ATV in the thickest nastiest terrain he can find. Then he will brush out the vehicle tracks for a considerable amount of distance. While he's brushing out tracks he will wear foot coverings that hide his tread pattern and give the illusion of aged tracks, if anything at all. Now he's on foot and has significantly reduced his signature and gained vitality.

Where Joe's Going

During preparation, you must thoroughly analyze the terrain along your path. The best way to do this is by going there in advance, before disaster strikes, to hike your chosen route by foot, taking thorough notes along the way of key terrain features that you may be able to use for rest, observation, ambush, communication, or to cache supplies.

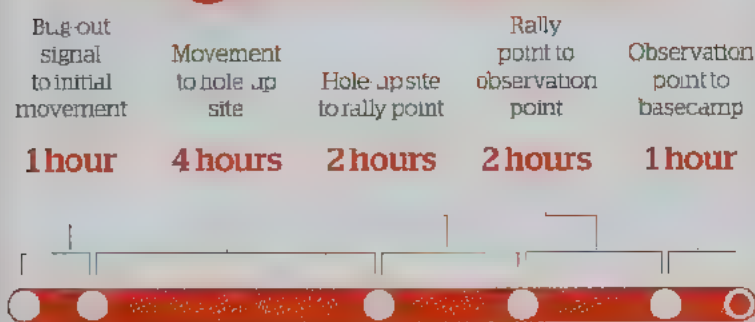
"Do your homework, Joe. It's the hard right versus the easy wrong."

How might a hostile tracker use these key terrain features against you? How much concealment does the route provide while moving during the day? Are there significant obstacles on your route that work for or against you?

Joe has learned the habits of nocturnal and diurnal creatures along this route because these creatures will display behavior that a tracker needs to anticipate danger. He will also use the ground type to his advantage. When feasible, he will walk to the sides of trails instead of on them, and he will walk on rocky ground instead of on soft soil. He will walk in water along streams when available. He will be attentive to every step he takes, because he knows it only takes one footprint for a good tracker to determine if you're his prey.

"Time to boogie, Joe," says the familiar voice in your head. Immediately you communicate with your loved ones not at home via text message and leave a secret visual marker at the front of your residence. This lets your clan know to begin the primary bug-out timeline you've all memorized and practiced. And you've taught them to acknowledge these messages with a pre-designated response.

Bug-Out Timeline



As planned, the timeline begins upon acknowledgment of the signal. You figured it would take one hour to get your supplies and leave the house. You planned for three alternate modes of travel: 2WD vehicle on roads, ATV by

backcountry trails, and on foot through so-e-busting brush. Due to the nature of the disaster at hand (near complete lawlessness) you determine that the path of least human interaction is best and decide to go off-road immediately. Your house backs up to state land, which is a vast desert terrain with minimal 2WD access.

So, at hour one, you have your ATV loaded up and out of the garage in a hurry. As you ride away, you hear distant gunfire from multiple large caliber fully automatic rifles, which your estimate is down the street from your home. "They're too late," you chuckle as you open up the throttle.

But then you slow down, remembering the tracks you are leaving behind. "Complacency kills," the voice says. You heed the collective wisdom of all the teachers and mentors you've had in the life and know that you must begin anti-tracking immediately. If those gun-toting opportunists come across your tracks a day or even a week from now and are able to follow them, you might compromise your camp's position and the safety of all who are sheltered there.

Ninja Escape and Evasion

Anti-tracking methods are used to confuse, delay and dissuade a threat who's pursuing you. These are passive measures that are to be employed constantly wherever

Bugging out in the backcountry? Very well be your edge. There's more to disappearing into your surroundings than just woods camouflage. Get some training and you'll be a pro.



the more you
know about the
terrain, the more
you can plan your
route. You'll
find you'll
don't prop
the more you

you that might be discovered, or easily followed, it would be disastrous for the money, time and sweat equity you put into preparing for a successful bug out were wasted because you were too easily tracked.

In this story's opening scenario, our hero, Joe, has a total weight (ATV included, of about 900 pounds, translating to a lot of destruction on the ground and deep, distinctive tread patterns. His boots are a non-typical high-quality hiking boot with an uncommon tread pattern supporting his 80-pound frame, which shoulders 100 pounds of kit. From his method of transport to his footwear selection, he has clear target indicators (i.e., anything a man does or fails to do which reveals his presence to the enemy) that are unique to him and easily identifiable to even the most novice trackers. So, what does one do when faced with the situation of needing to be somewhere in a specific time, while trying not to be followed?

I share some considerations that will always apply to any situation in which your trail could lead to your undoing, and how our hero, Joe, has been trained to deal with them. There are three factors of priority in relation to minimizing your signature on the ground upon bug out:

▼
**What you're
taking**

▼
**Where you're
going**

▼
**How you're
moving**

What Joe Takes

I hope, hopefully, your long-term survival plan afforded you the ability to travel fast and light upon emergency evacuation. If you have a tracker on your trail who knows what he's doing, then fast and light is what you are going to need to be. A good tracker can deduce how fast you're moving and estimate how far you can move within a given timeframe to determine where you may be. (Think Tommy Lee Jones hunting for fugitives.)

**"Damn it, Joe!
Ounces equal pounds,
and pounds equal pain."**

Traveling light affords you agility. And having agility affords you the ability to take the route of most resistance, which is counterintuitive to what most people want to do during a bug-out situation. By doing this, you will severely hamper a tracker's ability to anticipate where you're going. You will also force him to go through the same terrain, which he may not be prepared for. Then go around and attempt to pick up your trail further ahead—which can be a tall task at times.

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TIME TO BOOGIE

A Tactical Tracking Expert Reveals the Keys to Bugging Out Without Leaving a Trail

By Freddy Osuna
Photos by Luis Chacon Photography



With the exact loss of the mass evacuation, an emergency travel kit, the loss of the power grid, the aftermath, quite clear or not to the search and rescue mission, and looking and wondering on a most epic scale. And it's heading your way. Waiting and the impending doom at that point, it's too late to turn around. It's time to go. You've got to get out of here. It's time to go.



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Maintenance

Maintaining a snowmobile is just about the same as maintaining any other motor vehicle. Refill fluids and replace parts at regular intervals as specified out in your owner's manual. If you're not a do-it-yourselfer, your dealership or an independent licensed mechanic is a good way to ensure your snowmobile will be ready for when you need to bug out in a hurry. However, if you intend to use your snowmobile as a bug-out vehicle, it's a good idea to learn how to get your hands dirty. Before you ride, always check the oil, belts, and moving mechanisms of the snowmobile.

Preparing for Instant Access

Let's face it: Your decision to bug out or shelter in place is either going to be a split-second decision or a long, drawn-out process, depending on the kind of disaster and how it's presented to you. If you're looking at snowmobiles as a possible escape option, it means that you probably live in an area that sees a decent amount of snowfall or long periods of it. If that's the case, your snowmobile can be primed and ready to go in a garage or shed, with supplies nearby or even already strapped onto a sled.

Even if you don't live somewhere where you can zoom into the snow-covered woods at a moment's notice, having a snowmobile ready to go on a trailer as a secondary option is a viable option too. If time is a scarce commodity, it can be quickly deployed or it can be trailered until your primary vehicle becomes impractical. ■■

Getting Unstuck

Like an ATV on sand, traversing the snow in a snowmobile is all about finesse and knowing your machine's limits. But everyone at some point will get stuck for one reason or another. Maybe the incline is too steep or the snow too deep. Whatever it is, you need to get out.

It's advised to not travel alone so that your partner can help you out in a bind. Recovery depends on the situation, so it's not possible for us to explain how to get unstuck for every situation. But here are some general pointers on how to escape if your tread has dug you in deep.

1 If your snowmobile stopped while pointing up an incline, you'll want to grab the front end and turn it so it's pointing downward as much as possible.

2 Pack the snow in front of the snowmobile and dig out the snow under its front end to create a cavity. This will help level out the snow with the dug-in part in the rear.

3 Lift the rear of sled onto the uphill side if possible. This is another reason why you want to travel in a group — snowmobiles are heavy.

4 Steer the skis downward or toward the trail. Start the engine up and give it some gas. If all goes well, you should be able to drive it out of the rut.

5 Once you get it moving, keep it moving. Give it enough throttle so that it's moving but not so much that it buries itself again. Keep going and stop only when it is on a hard path or facing downhill.



Snowmobile Survival Kit

Just like driving a car, anytime you take a sled out, you run the risk of getting into an accident or having a mechanical breakdown. Snowmobile accidents are unique in that you might find yourself alone and freezing in the middle of nowhere. Here is a recommended list of gear to keep you safe, whether you're out riding for fun or bugging away from danger. This list is a good start, but you'll want to customize it to suit your particular needs.

First-Aid Kit

The reasons to have one of these on hand are self-explanatory. Choose a winter-specific kit if possible.

Shovel

We're dealing with snow here, so you might need to dig someone out from under an avalanche or get yourself out of a ditch.

Fire-Starters Kit

This is a no-brainer whether it's winter or not. A fire keeps you warm while creating a visual marker for rescuers. Make sure your butane lighter, waterproof matches, tinder, and other fire-making tools are in a watertight container.

Food and Water

High-energy foods are important to consume to help raise and maintain your core temperature. Peanut butter, granola bars, almonds, and most trail mixes are good options. Water is always good to have on hand.

Warm Clothing and Warming Layers

Pack a set of wool or synthetic gloves, waterproof shoe covers, and sweater, just in case. Don't forget a space blanket, as well as hand and foot warmers, too.

Snowshoes

You want to stay with your sled, if possible, but in case you need to hoof it to find help, you'll want a pair of snowshoes to help you travel a lot more efficiently.

Whistle

Being able to broadcast an audio distress call via a cheap plastic whistle is priceless when you need it.

Navigation Tools

A paper map, compass, and an electronic GPS unit are fantastic items to have, but what will save your life is an understanding of how to use these tools to figure out where you are and where you need to be.

Flashlight

A torch with extra batteries will help you see at night as well as signal for help.

Spare Parts and Tools

Learn some basic maintenance and keep an extra drive belt, a set of spark plugs, and tools in case you need to make a quick repair.

Tarp and Paracord

A tarp or plastic sheet can give you some relief from the snow if used as a mat or as a temporary shelter when used with some cordage.

Backpack

A good quality waterproof (or at least water-resistant) backpack that can carry your gear is of utmost importance.

Avalanche Beacon and Probe

Heavy snowfall presents many problems, including the possibility of avalanches. Avalanche beacons can transmit an emergency signal even if you're trapped beneath a wall of snow. Avalanche probes, which are essentially long poles, can be used to find others who might be buried.

This is a must-have for those looking to modify their snowmobiles into a full-on bug-out vehicle as it's the most efficient way of hauling enough gear and food for a long-term survival situation.



Cowl: Spreads the weight of the sled and protects the engine and other components from damage and the elements.

Engine Stop Switch: This switch kills the engine instantly.

Hull: Helps keep the snowmobile from being deep snowed and protects the undercarriage from damage.

Skis: Like also known as the sled runners.

Passenger Strap: A strap for passengers to hold on to.

Running Board: The foot rest area found on either side of the snowmobile. Sometimes called a "tunnel".

Ski Tip Handle: Handles found on the tips of the skis, which are used to control the snowmobile.

Skis: The snowmobile equivalent of wheels. These blades glide along the surface of the snow and propel the snowmobile.

Ski Spindle: Joins the skis to the suspension and the steering system.

Track: The large rubber tread that helps propel the snowmobile.



- 1 Brake lever on left side
- 2 Throttle lever on right side
- 3 Ignition key
- 4 Engine stop switch
- 5 Reverse gear

Snowmobile Legalities

Snowmobile Controls

On the handlebar, you'll find a lever for the throttle on the right grip and a lever for the brake on the left. There is usually an emergency brake, and some models also have a reverse gear. Its ignition key functions just like most other motor vehicles, allowing you to start the engine and power the lights and accessories. There's also an emergency kill switch that is usually located on top of the right-hand bar.

Similar to ATVs, other powersport vehicles, and even lawnmowers, there are two ways to start a snowmobile. There are ones that require you to fiddle with the fuel and air mixture through a choke control (usually a knob) and the throttle to get started when cold, and there are models with an electronic one-touch push button.

Once started, snowmobiles are simple to ride. There are no gears to change, just gas it to go and hold down the

brake lever to stop. Maneuvering in deep snow and holes takes more experience and skill to master, however.

Snowmobile Costs

Snowmobiles range from \$2,000 for a decent used one to more than \$15,000 for a new, performance-oriented sled. There are many models starting at different price points to accommodate a wide range of budgets.

Unless you live in an area that is constantly covered in snow, you'll most likely need a tow vehicle and trailer to move it from place to place when the white stuff isn't covering the ground. Open-air trailers start at about \$500 and enclosed trailers can get into the \$3,000 range.

Helmets can be purchased for about \$100 and gloves for about \$25. Winter clothing can be repurposed for snowmobiling—just be sure it's warm and waterproof.

Yamaha's SRViper MTX LE 162 is ideal for the deep powder found at high altitudes thanks to the 2.6-inch lugs on its Power Claw Track.



Purpose-built and equipped for use in rugged, high-altitude terrain, mountain snowmobiles are designed to be longer and narrower with high-horsepower engines. Riding through deep powder on steep terrain requires specially designed long-lug tracks and more horsepower due to power loss at higher elevations. If you live in a densely wooded area or on a mountain range (Denver comes to mind), you might require the added power and specific design that a mountain sled brings.

As a utility snowmobile, the Bearcat 5000 XT from Arctic Cat can haul heavy loads over rugged territory.



Like its name implies, this is the workhorse of the snowmobile community. Utility sleds are longer, wider and heavier than other types and ride well in trails with heavy snow. Utility models are often found towing work sleds. This is probably the type your local ski patrol uses. We like this model for its versatility and towing capabilities. Hook up a loaded sled with your survival gear and you're good to go.

The Yamaha SRViper XTX SE is a crossover snowmobile meaning it's versatile enough to take on well-worn trails and to hit fresh snow in the undiscovered backcountry.



For the rider looking for a go-anywhere option, the crossover is for you. Capable of cruising a shallow snow trail or skiing through no-man's-land, its longer track and upgraded suspensions are suited for a variety of terrain. The Crossover is a great choice for those looking to go on and off trail.

SURVIVAL SLED



Snowmobile Safety

Snowmobiles are unique vehicles that operate differently from most other modes of transport. Understanding how to safely operate them is important to using them as effective survival tools.

Snowmobiles are propelled by an exposed revolving track. Be mindful to always stay clear of this track. Not only do you want to keep limbs and loose clothing out of its way, you also want to remember that while in motion the track kicks up snow, rocks, and other debris behind it.

It's also important to maintain good balance for proper control. Beginner riders should be seated with feet planted on the running boards and hands on the handbar grips. More experienced riders can use leaning techniques for better vehicle control.

Safety gear such as a helmet, eye protection, and warm clothes keeps you safe and comfortable while riding. As always, review your owner's manual for detailed safety information.



SURVIVAL SLED

Snowmobiles 101: Old Man Winter's No Match for This Vehicle

By Martin Anders

When major winter storms crippling large areas of the United States and Canada this season, the usually mundane task of getting yourself from one place to another has become a dangerous, and in some cases deadly, ordeal. At times, transportation has ground to a standstill due to vicious snowfall. In some areas—in Buffalo, New York, a recent storm reportedly dumped as much as a year's worth of snow in one week. The powder came down so quickly and heavily that it left people stranded, fending for themselves in cars, offices, and shopping centers.

With that as the backdrop, let's say a great calamity has befallen your city and it's time for you to get out. The biggest hurdle will be the impassable roads, which are clogged with both snow and panicked people. Your alternative? Hit the snow.

Staying mobile can give you the ability to get help and supplies—or even to escape if need be. Being stranded means taking your chances with not only Old Man Winter but also the destructive aftermath, too. Whenever possible, we believe in having multiple transportation options to help improve one's chances of survival. One of the best vehicles on snow is no surprise—the snowmobile. It's agile on powder, relatively lightweight, and packs plenty of power to haul ass and gear.

Snowmobiles are usually found in snowy backwoods country or pulling emergency medical duty at ski resorts. They aren't usually found cruising Fifth Avenue in Manhattan or zipping down Main Street, Anytown, USA. But with the strange weather that's been going on the past few years, you never know when this kind of vehicle will be used for urban survival. So, this feature article will walk you through the basics of snowmobiles. If you're already familiar with these machines, this article can serve as a review of the fundamentals.

Snowmobile Types

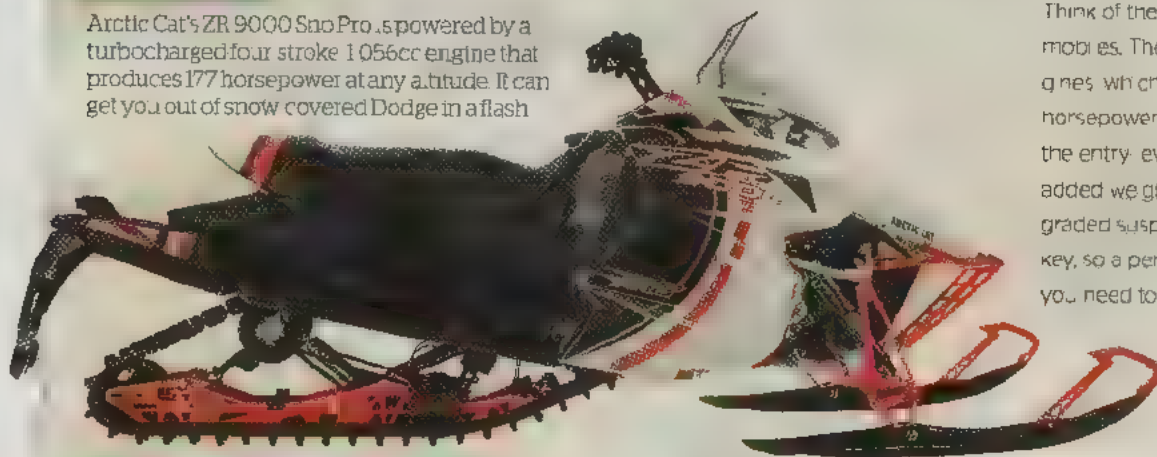
Just like any other mode of transportation, there are different snowmobiles made for different types of uses. Snowmobiles are divided into six major types:

Trail
The Arctic Cat Lynx 2000 is a trail snowmobile, ideal for new riders or those looking for a new but affordable option (its MSRP is \$6,499).



Often called trail models, entry-level snowmobiles come equipped with engines in the 60- to 70-horsepower range. They are easy to ride and relatively inexpensive. They tend to be lightweight, but are slower and can't take on rough terrain as well as more powerful models. If you're escaping as a child, there are also less powerful models made with younger riders in mind.

Sports
Arctic Cat's ZR 9000 Sno Pro is powered by a turbocharged four-stroke 1,056cc engine that produces 177 horsepower at any altitude. It can get you out of snow-covered Dodge in a flash.



Think of these as the sports cars of snowmobiles. They feature more powerful engines which generally crank out 85 or more horsepower. These sleds are heavier than the entry-level models because they have added weight from a larger engine and upgraded suspension components. Speed is key, so a performance mode could be what you need to get out of town quickly.

Touring
As a touring snowmobile, the RS Venture GT from Yamaha emphasizes a smooth ride for long treks.



Touring snowmobiles are longer and can seat up to two riders. They include features like side mirrors, a backrest for the passenger and a larger windshield. Touring models are designed for riding long distances in comfort. If you're bugging out with a loved one, this model is a good choice.



the issue of cloth serves only as a wick. If you don't have denatured or isopropyl alcohol available, you'll have to use whatever flammable liquids are available.

Now pour your filtered water into a pot. You can't place the pot directly on top of your improvised stove, as it will restrict oxygen flow and extinguish the flame (a handy trick to remember when you need to safely put out the fire: instead, position your DIY stove between two stacks of bricks or empty ammo cans) and make sure they're slightly taller than the stove. Then place the pot atop the bricks. You're outdoors, especially in the cold. It's important to block out the wind around your improvised stove. It takes much longer to heat the H₂O if you don't.

Make sure you heat the water to 160 degrees Fahrenheit, a temperature at which pretty much no germs can survive. No thermometer problem: see the "Temperature Test" sidebar. Obviously, it's important to let the water cool before attempting to consume it. And always be careful, whenever an open flame is present and be cautious of any hot surfaces.

Conclusion

Lastly, keep containers of powdered drink mix on hand, like Tang, Hi-C, Gatorade, Emergen-C, or hot cocoa. Why? One, it makes pond water taste a lot better, which is more palatable for your kids. Two, it adds electrolytes and potassium to the liquid, keeping you more energized. And three, drinking water alone could flush out necessary minerals. If you're not careful, which can be dangerous in a long-term survival situation.

Whether you have a common, everyday filter or had to McGyver your own from scavenged parts, filtering water can make all the difference in a crisis event. But it also takes common sense and the right attitude. Don't obtain H₂O from places that are clearly contaminated with toxins.

Do stay calm and be creative with the resources in your environment. The proper mindset is the most important resource you have. So, stay positive, adapt, and find a solution, or you'll become part of the problem. ☺

About The Author:

Jim DeLozier, designer of the Survivor Trucks, is an aggressive continuity consultant who helps people prepare for anything and everything. Jim and his team design and build vehicles, structures, and shelters. They also train people in everything from martial arts and long range precision shooting to power generation and hydroponics/aquaponics.

www.SurvivorTruck.com/consulting/

5 Methods of Water Disinfection

1. Boiling: Water that has been boiled up to 160 degrees Fahrenheit for 1 minute, it's safe to drink after it has cooled.

2. Filtration: Filters that are sized between 0.1 and 0.4 microns will remove bacteria, but not viruses from water. Special hollow fiber filters can remove viruses. Reverse osmosis filters remove both bacteria and viruses.

3. Chemical: Tablets or packets of powdered chemicals to disinfect water. This method usually involves chemical disinfectants such as chlorinated hydrocarbons and may take several hours before all the germs are killed.

4. Ultraviolet Light: Measured doses of UV light are effective at disinfecting small amounts of clear water. Be careful when the water isn't clear. UV light is less effective in cloudy water.

5. Solar Radiation: Water can be disinfected with the power of the sun. Fill a clear plastic bottle, lay it on a reflective surface (such as aluminum foil, shiny side up), and let it sit. The water will be safe to drink after at least six hours in bright sunlight. This technique only works with water that is clear, not cloudy.

6. Solar Still: A solar still is a device that uses the power of the sun to evaporate water and condense it into a collection container. It's a simple, effective way to purify water.

7. Distillation: Distillation is a process that involves heating water to a boil, capturing the steam, and then condensing it back into liquid form. It's a reliable method for purifying water.

8. Reverse Osmosis: Reverse osmosis is a process that uses a semi-permeable membrane to remove impurities from water. It's a common method for purifying water in homes and businesses.

9. Ionization: Ionization is a process that uses electrical energy to break down water molecules into hydrogen and oxygen. It's a relatively new method for purifying water.

10. Ozonation: Ozonation is a process that uses ozone gas to kill bacteria and viruses in water. It's a common method for purifying water in swimming pools and wastewater treatment plants.

SOURCE: <http://www.mcguyers.com/page/what-is-water-purification>

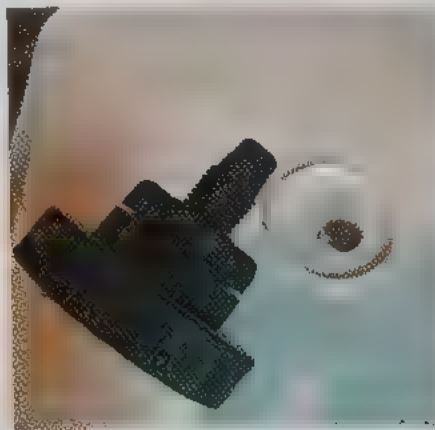


Second Filtering Stage:

1. Many homes have refrigerators with built-in water dispensers. Where there's a water dispenser, there's probably a water filter as well. Usually the filter is either a carbon or ceramic filter – both will work well for our needs. (Coincidentally, most businesses have coffee makers with either an inline water filter or paper coffee filters.) Find the filter element and remove it. Usually it twists out of its receptacle by spinning it counterclockwise. The best type has a hole in only one end.



2. You will need two buckets (or some equivalent), one of which you must punch a hole in the bottom. Before you make the hole, identify the size of the threaded portion of the fridge's water filter – then carefully make a hole in the bottom of the bucket that's just slightly smaller than the threads of the filter.



3. Once that's done, place the threaded portion of the filter over the hole and, while applying slight downward pressure, turn the filter clockwise, allowing the filter to thread itself into the hole in the bucket. Once this has been completed, take your other bucket (with no hole) and place it beneath the first one to capture the water that comes through the filter.



4. Take the H₂O from your first filter setup and pour it into the bucket with the second filter, allowing it to flow through the ceramic or carbon filter into the container below. You have now filtered your questionable liquid twice; it should be fairly clean now, but if it's not clean enough at this point, repeat the process until the water is clear or nearly clear.

Treating or Heating

Once you're satisfied with the clarity of the filtered water, you can now heat it or treat it to be sure it's safe to drink.

Chemical Treatment: If you have access to regular household bleach (which you always should), you're in luck. Bleach works great at treating filtered water. It doesn't take much, so go easy. In fact, it takes about only two drops of bleach per quart of water or eight drops per gallon. Remember, a quart is equal to four cups, so a little goes a long way. Bleach kills 99.9 percent of all germs, so it's very handy. Iodine tablets could also serve the same purpose, but household bleach is more versatile.

8 DROPS OF BLEACH



1 GALLON OF WATER

One life-saving fact: Most organisms can't survive in temperatures above 110 degrees, while SHTEs especially like temperatures you've just filtered. But just to be safe, I ran it up to 160 degrees. How do I know? Well, I've got a 160-degree thermometer in a SHTE scenario.



Heat Treatment: However, if you don't have beach in hand or want to take to the next level, you can heat the filtered water to be extra sure it's safe to consume if you have power (or a camp stove in this last step, I assure). But if you're stuck huddled out or are trapped away from home, you'll have to create a stove. For your improvised heating element, consider the following:

- Medium metal can eg 1 pint coffee can
- 1 quart pint can without paint residue
- Small soup can
- Large ceramic coffee mug

On a yellowed and your desired improvised sleeve set aside. Next grab a roll of toilet paper and pull out the cardboard sleeve in the middle without tearing the paper. No this isn't a magic trick. Grab the cardboard insert with your fingertips while holding the roll and simply pull the tube out of the center. Save the cardboard for a different use. They are a bit more bendable just above the toilet roll. If you're creative enough, compress the toilet tissue and place it inside the can so it's snug inside. It won't fit. Slowly remove layers of tissue until it does. Toilet paper is a valuable substance. I rolled up washcloth or hand towel.



natured electric or
91 percent supposedly
a cloth over the
tissue or cloth towel
and carefully light
the improvised
stove. Be aware that
the flame might be
present but not
visible. The alcohol
is what burns, and

For the purposes of this story, we'll assume that you've practiced some common sense and found water from a relatively safe source—but you're not 100-percent sure if you should consume it. How do you know if it's safe to drink? Can you cook with it or drink it?

Consuming it straight from the source is definitely not a good idea unless you want the runs, a crippling illness, or worse (see "Germ Warfare" elsewhere in this issue for more on microscopic pathogens). No doubt you'll need to filter the wet stuff, which is easier said than done if life as we know it has crumpled at our feet or gone up in a mushroom cloud. When commercially available filters aren't available, you'll have to roll up your sleeves and improvise.

Filter Materials

When attempting water treatment, you'll need to first filter it through different media to remove most of the particulate matter. Sift out the larger contaminants, then the smaller, then the microscopic. Once that's completed, you'll need to heat or treat the H_2O depending on available resources. Therefore, you'll need to obtain some items to repurpose for your D.Y. water treatment system.

Filter Media: You might not realize it, but there are dozens of everyday items lying around that could be used to filter water. Here are some common examples.

- | | |
|-------------|-----------------------|
| › T-shirts | › Pillow stuffing |
| › Towels | › N-95 mask |
| › Stockings | › Coffee filters |
| › Bandanas | › Fridge water filter |

You could also use earthy materials too, like gravel, sand, and charcoal. While they're not as abundant in concrete jungles like New York City (unless you happen to be inside a Home Depot when stuff hits the fan), they're great to use if you can find them.

Water Containers: Next, you'll need at least two containers that can hold H_2O . Consider any of the following.

- | | |
|------------------------|------------------------|
| › Plastic soda bottles | › Buckets |
| › Milk jugs | › Empty bleach bottles |

You could even use pots or pans for one of the containers, but plastic works best because you can cut it or poke holes through it as needed.



Filtering Techniques

First Filtering Stage:

1. Take a milk jug or large soda bottle with a cap if possible, and remove the bottom by cutting it off carefully with a sharp knife or scissors.

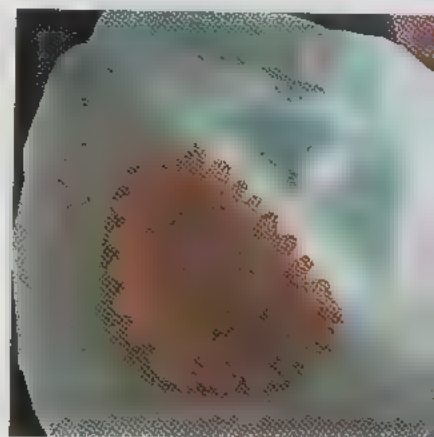


2. If the cap is available, make a hole in it by setting it on a flat surface and placing the tip of a knife on the top of the cap. While carefully holding the cap, twist the knife around while applying pressure until you make a small hole. Once a small hole is in the cap, place it back on the bottle and turn the opening side up.



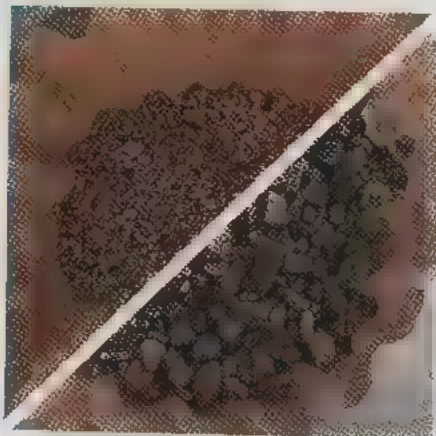
3. Next, place the finest filtering element available like a coffee filter or N-95 mask, or tampon (see "Boddy ingenious" elsewhere in this issue), at the bottom of the container (closest to the cap).

IMPROV: If there's no coffee filter or N-95 mask handy, you can substitute paper towels.

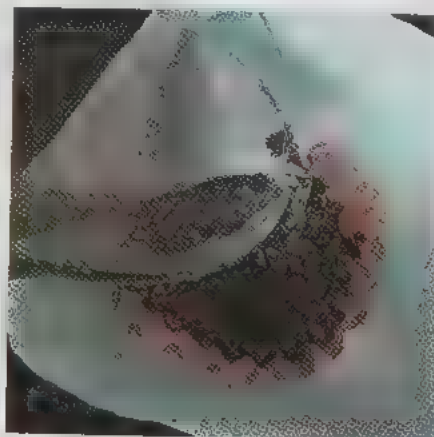


4. Then take the charcoal (if available), smash it into fine pieces, and place it inside the filter material. Cover the charcoal with about 1 inch of sand and cover the sand with about 2 inches of gravel.

IMPROV: Can't find enough gravel, sand, and charcoal? Replace them with cotton balls, cloth, or pillow stuffing.



5. Slowly pour the water you've found into the improvised filtration system so as not to disrupt the filtering elements. This should eliminate most of the sediment or particulate matter and prepare us to move on to the next step of filtration.



Extreme Situations

It would be bad enough to be stranded in a blizzard, but things could always be worse. What if your car runs out of shelter, caught fire? Or what if it slides off the road into water? If you're lucky enough to escape, you're now completely exposed to the elements, and you may even be soaking wet. Here are two scenarios where bad turns worse, and how to deal with these dilemmas.

» Vehicle Fires

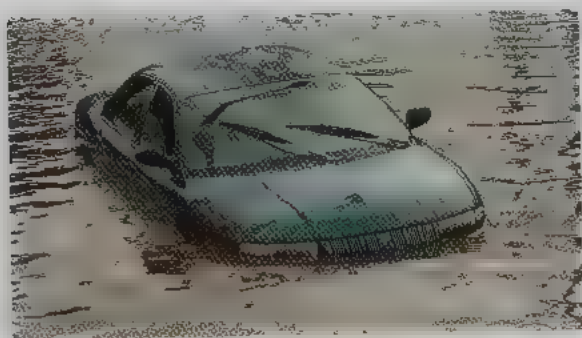
Due to the electricity and flammable fluids purring through your vehicle, it's possible that a vehicle fire could be the cause of your roadside winter distress. These fires can accompany car crashes, or they can happen spontaneously. On the upside, a car fire does is a phenomenal signal for help. On the downside, you've probably lost most of your survival gear or definitely lost your shelter.

If your vehicle catches fire on its own or due to a collision, get away from it as quickly as you can. The automobile won't explode as TV and movies suggest, but with the burning plastic and gasoline, the heat can be intense and the fumes toxic.



» Submerged Vehicles

One of the most frightful vehicle scenarios is when your car gets submerged in water. With you in it, your beloved car can become your watery grave. If you slide off the road into a pond, river, or lake, you have only seconds to react, so it's critical that you don't panic.



Big Mistakes to Avoid

There are some dangerous things that stranded motorists do. Sometimes the hazards aren't always that obvious. Consider avoiding these potentially dangerous mistakes.



» Leaving Your Engine On

If you're stuck in your vehicle in subzero temperatures, your first instinct might be to turn on the engine to run the heater. But if the exhaust pipe is partially blocked, the tradeoff for warmth could come at a disastrous price. Snow, mud, or water can create a blockage on the exhaust system, causing deadly carbon monoxide (CO) to flood the vehicle cabin. Because it's colorless, odorless, and tasteless, CO can build up undetected and could knock you out and eventually kill you. If you must turn on your engine, spring a warning every 15 to 20 minutes.



» Leaving Your Car Covered

Blizzard, snow, and sleet can fall fast and furiously. If you don't work to keep your car clear, it can be blanketed in the white stuff in no time. In this survival situation, camouflage can mean death. You have to stay visible so you can be spotted quickly. And the last thing you need is to have a snowplow crash into you because they thought that your pile of powder was just another snowdrift. Keep the hood and windows cleared so that you can see out and good Samaritans can see in. Toss up something colorful above the vehicle, such as a red handkerchief from your antenna. If your car is a late-model sedan and doesn't have an external antenna, cut off a tree branch, plant it into the snow, and use your car as the handle to hold it to the top of the snowdrift.



» Leaving Your Vehicle

Even if it's not a complete whiteout, cold weather can still take a massive toll on your body in a short amount of time. Leaving your car to live help without the right gear can hurt you. Cold can actually do much more harm than good, turning you into a human popsicle. Stay in your vehicle, unless it's to remove mounting snow from your windows and hood out to clear that help of a passing motorist nearby.



Unfasten your seatbelt (after the vehicle has impacted the water). Make sure any passengers have done the same. Roll down only one window, preferably before the car sinks. (Because there's no guarantee your window will work after you've hit the water, you should consider having a window breaking device on your everyday-carry knife or someplace easily accessible in your car.) Note that once the car has begun to sink, you will not be able to open any doors until it completely fills with water, due to the difference in pressure inside and outside the car. Take a deep breath and climb out. Make sure everyone is out and swim to dry land. Try to get help immediately, as wet clothing will lead to hypothermia in minutes during colder weather.

Conclusion

An ounce of prevention and a pound of stay-the-hell-home make a great recipe for survival when winter driving conditions are poor. But if you must go out (be it for your livelihood or to flee a whole other disaster), make sure the vehicle is well stocked with tools, backups, and supplies. Actively consider what you would need to live out of that vehicle, and how you would do it. Throw some extra food in there and some sanity savers, such as classic novels you've always wanted to read, a notepad to write journal entries or a deck of cards to pass the time.

Most important of all, carry an abundance of cold-weather sleeping bags, blankets, and arctic-approved outerwear. And finally, stay with the vehicle. It's both your shelter and your signal for help. ❧

About The Author:

Tim MacWelch has been a survival instructor for the past 18 years and has trained everyone from civilians to all branches of the U.S. Armed Forces, the Department of Defense, Department of Justice, and the State Department. He is a public speaker on preparedness and the author of the survival books, *Prepare for Anything* and *Hunting And Gathering Survival Manual*. When he's not teaching or writing about survival, MacWelch lives a self-reliant lifestyle with his family in Virginia.

For more, follow him on Twitter @timmacwelch or go to www.advancedsurvivaltraining.com

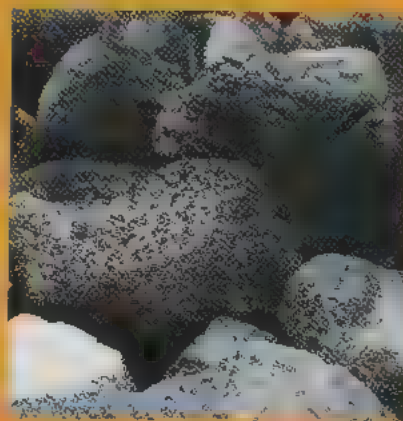
Safety Precautions

There are no guarantees you'll survive a winter emergency that might happen when you're driving, but there are a few things that will help improve your odds and increase your comfort. Always consider the following:

- » Wear a seatbelt
- » Drive the speed limit on dry roads, way under the limit in inclement weather
- » Drive a vehicle with the highest safety ratings you can afford
- » Eliminate loose objects in the vehicle cabin lest they become dangerous projectiles in a crash
- » Like a bug-out bag, stock up your car for winter (or Armageddon, whichever comes first)
- » Bring a small bucket with a tight-fitting lid and a roll of toilet paper you can be glad you did after your first bathroom break



Hot Rocks



Generally speaking, fire inside a vehicle is a bad thing. Even if it's just a candle flame, it gobbles up oxygen and could light your blanket and clothing on fire. If you find yourself in need of warmth and fire is your only means, you can use an ancient survival technique that has many applications in the modern world: hot rocks.

If you can get a fire going outside of the vehicle, collect a few rocks from a dry location (don't use rocks pulled out of water - they could explode when the steam inside builds). Leave the rocks in the fire for a few minutes, and in the meantime pull up the carpet from one spot on the vehicle's floor, exposing bare metal. Use sticks or your shovel to scoop up the rocks after 15 or 20 minutes of heating and place them on the bare floor in the car. Keep bedding and fabrics away from the rocks, and bask in their warm radiance. Repeat as needed.

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WINTER WHEELS

Prepping Your Vehicle — and Your Mindset — for Cold-Weather Survival

By Tim MacWelch

It's a very different world from the one you just made. Her plans for the winter and the fact who dared to live in it. The winter is a very different world from the one you just made. Her plans for the winter and the fact who dared to live in it. The winter is a very different world from the one you just made. Her plans for the winter and the fact who dared to live in it.

Your sweet new ride may have the works—seat warmers, HID lights, all-season tires, and four-wheel drive. But does it have the things that are the most important?

With space-age advances in design, materials, and vehicle safety, driving in the winter doesn't seem as intimidating as it once was. But that's the reason to drive off in the storm, as if looking for trouble. Thousands of vehicles (both high-end and jippy) expire on the side of road every winter. And what if it's not engine trouble that leaves you stranded? What if the highway is just gridlocked from an accident, leaving you and

Or perhaps you ran out of gas or had a tire blow out late at night on a remote frozen road. It's not unthinkable either to be hit by a sudden snowstorm or to be stuck in a blizzard.

Are you prepared for the winter? Do you have the right gear? Do you have the right mindset? Do you have the right gear? Do you have the right mindset? Do you have the right gear? Do you have the right mindset?



Survival Supplies

» Communications

This is the first type of gear that can get you out of a roadside winter emergency. Since most people carry mobile phones these days, the only other thing you'd really need is a way to recharge it. A car charger or battery backup pack can keep your phone powered and allow you to call for assistance—providing that you have signal. Try sending a text message if calls won't connect and consider a satellite phone for way-off-grid driving (see OFFGRID's Spring 2014 issue for more on satellite phones).

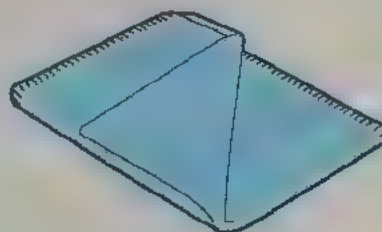


For up-close and personal forms of communication—like to other motorists—keep an assortment of road flares and reflective signs in the vehicle. Thirty-minute road flares can alert other drivers of your distress and have an added benefit of being able to start fires. Reflective signs are also handy, since flares last only so long. Get reflective signals that are large, free-standing, and heavy so that the wind or vehicles won't blow them over.



» Warmth

If you can't reach anyone on the phone, you may be on your own for a while. First and foremost, you'll need items for warmth. Blankets, sleeping bags, parkas, and snow suits are all acceptable forms of insulation. Keep at least one item like this for each seat in your vehicle. This will provide shelter for each potential passenger and the driver. And stay in the car in the event of a breakdown in frigid conditions. Sure, you can run the engine periodically and use the heater to warm up. But this trick is not without its problems (see the "Big Mistakes to Avoid" sidebar elsewhere in this story), and should be done sparingly. The average vehicle is a surprisingly decent form of shelter, keeping out wind and precipitation. Still, it'll make a cold tomb without warmth.



» Food and Water

Since dehydration can still happen in the cold, a supply of water should be part of your vehicle's winter emergency gear. It can also top off a leaking radiator. Most store-bought drinking water in plastic bottles are a fine choice, since they can freeze and expand without bursting. You'll also want calories to keep you warm and fill your hungry belly. A non-perishable food supply will deliver energy and a major morale boost. Select high-energy food (high fat content) and don't pack items that will be difficult to eat if frozen. We're a big fan of peanut butter and crackers for food stashes like this.



» Tools

If you're the handy sort, or lucky enough to run into someone who is, you can use some basic vehicle tools and equipment to get you out of trouble. Consider the following items.

A heavy gauge set of jumper cables can allow another car to jump your cold-crippled battery providing you have another vehicle that's running. Consider a "jump pack" which is a portable battery-powered jump starter if you often travel lonely roads.



Handtools are also useful. A hammer, a socket set, some duct tape, and adjustable wrenches can be lifesavers when working on vehicles. Keep a few sizes and types of pliers, too—they're handy if you must pull a nail from your tire, swap out your battery, or mend a malfunction. Don't forget to bring a small shovel, which is useful for many tasks, i.e., digging out your tires if you're stuck in snow.



Survival Supplies

» Tools (continued)

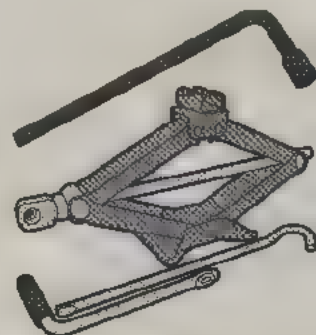
A nylon recovery strap can pull your vehicle out of a ditch, a snow bank, or a frozen swamp. Should there be a sturdy vehicle to yank on the other end. Choose a thick and heavy strap that has no metal parts, just loops on the ends. This is important because a strap can break when towing, launching the metal hooks through windshields or at hapless bystanders. Prepare yourself for the specifics of vehicle recovery by asking an expert or researching techniques online.



Tire repair items can get you back on the road. Grab a can of "fix the flat" type tire mending spray which can fill and seal small holes in a flat tire. Add a tire plug kit for handling bigger repairs. The plug kit comes with glue, a few specialized tools, and some rubber fiber strips, which can fill big holes in your tire's tread. If you've never plugged a tire before, it's a good idea to practice on an old tire before you get a puncture and find yourself learning on the job at the side of a frozen road. You'll need some air to finish off the job. It's a good idea to carry a small air compressor that plugs into a vehicle's cigarette lighter or power port. Make sure the compressor you choose has the power to inflate your vehicle's tires, as air capacity and pressure requirements for car and truck tires can vary greatly. And yes, we've had to use our compressors several times.



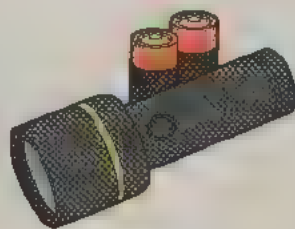
You'll need a tire iron to break the lug nuts loose on each wheel and a jack to raise and lower the vehicle for tire changes or other repairs. A short section of pipe can slip over your tire iron to provide additional leverage. A gas siphon hose and a spare jug can be valuable, too.



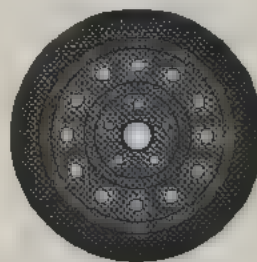
A first aid kit is a must. It's not always the car that needs a repair—sometimes a passenger or driver needs to be patched up as well. A good first aid kit serves many purposes, and gauze makes a great emergency fire starter.



Flashlights or headlamps with spare batteries, should be standard equipment in any car. It gets dark under the hood when the battery is dead, and night is never too far away.



A spare tire was once included with almost every new car, but today, many cars are not sold with a spare at all, not even a dinky little emergency tire. Whether your vehicle came with a spare or not, get a full-sized spare tire for emergency replacement.



Small fire extinguishers can put out small fires in a vehicle, preventing greater damage and loss. But don't try to play firefighter if you think that gasoline is involved. Get at least 50 yards away from a vehicle on fire, and stay away.



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


An improvised weapon will always be a last ditch measure – one that you don't want to test out unless you absolutely have to. The moral of this story is not to become a jock to and abandon modern weaponry. In fact, it's wise to embrace



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The finest weapons the 21st century has to offer just don't become overly reliant on this modern technology. You never know when you might be reduced to fighting with sticks and stones. 

3 Unusual Prison Weapons

1) Powdered Non-Dairy Creamer Flamethrower:

2) Chocolate Napalm: Melted chocolate sticks to

3) Razor Blade Whip: Tie a shoelace to the end of

WARNING:

Making and using improvised weapons can be inherently dangerous and doing so is at your own risk.

IMPROVISE TO SURVIVE



Projectile Weapons: These tools have better range, but are the most risky to use. Once you've used your weapon, you're left defenseless while you reload, draw another weapon, or make your escape. However, with proper training, these weapons can be deadly. Included in this category are slings, bows, javelins, throwing knives, and bolas.

Keep in mind that any of these categories may be combined for added effectiveness. For example, a shove, pickaxe, or hatchet would serve as an excellent hybrid of blunt force and piercing. A tomahawk can be used for hacking and slashing, or thrown for added range. The more weapons you make, the more options you have. The possibilities are as limitless as your ingenuity.



Projectile weapons, such as this MRE pouch sling, have proven to be highly effective for both hunting and defense. On the other hand, they require considerable practice to use properly and have a higher potential for failure.

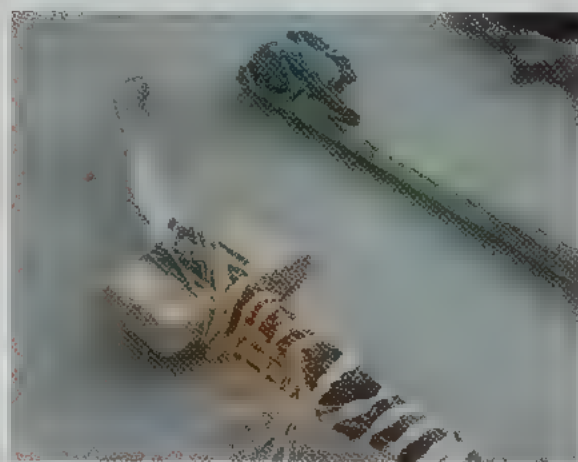
This improvised flail features sharp spikes lashed together and tethered to a handle similar to designs used during the 15th and 16th centuries. It may not last more than one or two blows, but we certainly wouldn't want to take one upside the head.

Learning from the Past

Learning about ancient weaponry is crucial to making effective implements of your own. Thousands of years of trial and error went into the designs of many so-called primitive weapons, and it would be foolish to disregard this knowledge.

Online encyclopedias have huge indexes of edged, blunt force, and projectile weapon designs to study — or you could go old-school and visit your local library. Start with a simple design, and practice building it from materials commonly available in your area. Don't go expecting to build yourself a crossbow under pressure.

Most importantly, learn how to use your weapon of choice as its originators intended. If you study the warfare of the past, you'll be better prepared for anything that comes your way in the future.



Building a Weapon

Now that you're aware of the different weapon classes, on to the harder part: how to actually build one. These techniques, and your available resources, will vary greatly between urban and rural environments, so we will address both settings.

Urban environments (whether metropolises or small towns) are rife with all sorts of useful manmade materials. Building a weapon from scratch probably won't be necessary here, seeing as how there are many preexisting weapons available — and we're not even talking about guns and machetes. Crowbars, chef's knives, baseball bats, and the like would be relatively easy to obtain. If you find yourself



In a place devoid of any effective impromptu weapons and forced to create a more effective tool, plenty of building materials can be found in homes and businesses—duct tape, cable ties, barbed wire, and even broken glass.

One key point to remember in urban settings during a chaotic event: you'll be more likely to run into other people carrying more formidable weapons or guns, making stealth a key to self-defense.

The Filipino Connection

If you're a fan of *The Bourne Identity*, you've probably never looked at a ballpoint pen the same way after watching the first installment of the movie franchise. In the 2002 original, the titular amnesiac spy (played by Matt Damon) dispatches various assassins with the help of all sorts of ordinary objects, including said pen.

Much of the movie's action came courtesy of fight choreographer Jeff Imada, a stuntman and martial artist who drew heavily from his background in both *Jeet Kune Do* (the system founded by Bruce Lee) and *eskrima* (a Filipino martial art). These systems emphasize adapting to your environment and your opponent—using any and all means available to you. While *eskrima* is often considered a blade-and-stick art, its students can apply its combat principles using almost anything they can grasp. Pencils, umbrellas, and even this very magazine rolled up into a tube are potentially lethal improvised weapons in the hands of a skilled *eskrima* practitioner.

Your name doesn't have to be Jason Bourne for you to develop competency in using everyday objects as self-defense tools. From handheld flashlights to soda cans, ordinary items can make the difference between going bare-knuckled and having a distinct tactical advantage in an unexpected emergency.

—By Patrick Young

IMPROVISE TO SURVIVE

Rural or wilderness environments make it much more difficult to build improvised weapons, primarily due to the lack of manmade materials. Even finding something as simple as cordage to lash a club together can be a struggle. Your primary materials will be stone and wood, so think primitive. Clubs can be formed by lashing a rock to a branch with fibrous vines or bark strips. You can also use twine, paracord, or fabric from your own clothing—whatever is available will (have to) do.



For a club, you can use a rock and a branch, lashed together with twine or bark strips.

Barbed-wire fences can be a real asset, since the sharp wire can serve as both a binding agent and part of the weapon itself. Additionally, the thin stamped steel fence posts found in some areas can serve as a lightweight, strong weapon handle. Other materials to keep an eye out for include nails, bone, shells, and garbage. Something as innocuous as a discarded plastic bag can be repurposed into a sling pouch or cordage.

Many other weapons can be constructed quickly without complex tools. A spear can be formed by working the tip of a branch against a rock, or using a small knife if you happen to have one. If you've got a larger fixed-blade knife, just lash it to the end of a pole for added range. Even if you're not in a wooded area, palm fronds or yucca stalks can be used in place of branches.





Sharp rocks. Arrows. Catapults. Blunderbuss. SCAR-17 rifle. Intercontinental ballistic missiles.

Since the dawn of time, man has been crafting weapons. Much like our need for food and shelter, it seems the desire to defend ourselves from harm is ingrained in our DNA—and most of the time our fists and feet just aren't good enough. Take a look at even the most primitive, isolated cultures on earth, and you'll see a plethora of different weapon designs, from simple spears and clubs to more advanced contraptions. It's easy to understand why, in many cultures, to have no weapons is to face an immediate, painful death.

Today weaponry has evolved considerably beyond the humble spear. In fact, many of our own firearms that are more powerful, durable, and compact than our ancestors could have possibly dreamed. So it's easy to become overly reliant on our modern technology, and we rarely consider what might happen if these high-tech weapons malfunction.

Or, worse yet, if we found ourselves in a life-and-death situation completely empty-handed.

What if you were thrown into a hostile scenario with nothing but your ingenuity and the clothes on your back? Would you have what it takes to create your own weapon and survive?

The mention of improvised weapons may evoke images of wilderness survival TV personalities building overly complex snares or poison darts, but the reality is much simpler. In fact, makeshift weapons have a long history of real-world effectiveness—for example, just look at the prison system. Even in the most Spartan environment imaginable, with limited resources and under near 24/7 observation, convicts have managed to create deadly weapons from combs, toothbrushes, and even toilet paper. It's all about setting one's mind to the task at hand and taking stock of one's resources. Once that happens, weapons will become readily apparent.



Here's a small sample of a few improvised weapons created by untrained survivalists over the course of a few hours. The diversity seen here is truly impressive. Now imagine what could be done with a little study and practice.

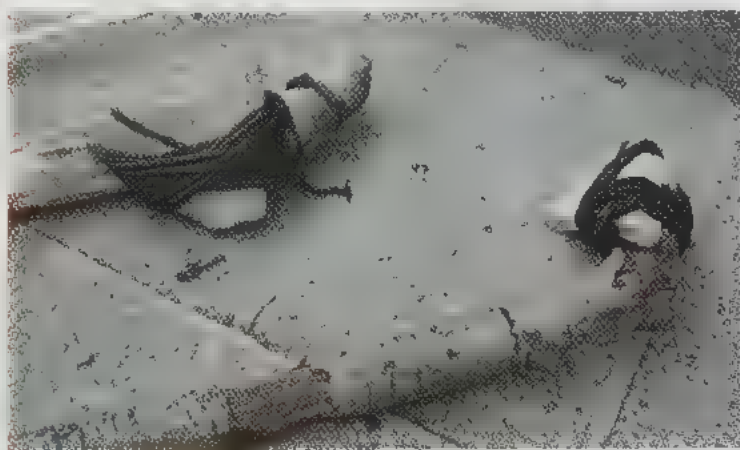
Types of Improvised Weapons

Stuck between a rock and a hard place, with all manner of predators (either the two-legged and four-legged variety)? The first step is to take in your surroundings and note what objects are available. Then consider whether those items can be crafted into three classes of improvised weapons: blunt force, piercing, and projectile. Each category has its advantages and disadvantages.

Blunt-Force Weapons: They're exactly what they sound like—simple, no-nonsense, and absolutely devastating when used correctly. Channel your inner caveman, because the club is one of the most well-known weapons in this category. Maces, staves, batons, and knuckledusters would also fall into this class, as do kash sticks (for those of you familiar with Filipino martial arts). In a wilderness setting, a solid tree branch would make an excellent blunt-force weapon, while

an urban environment might furnish a pipe, 2x4, or even an actual hammer.

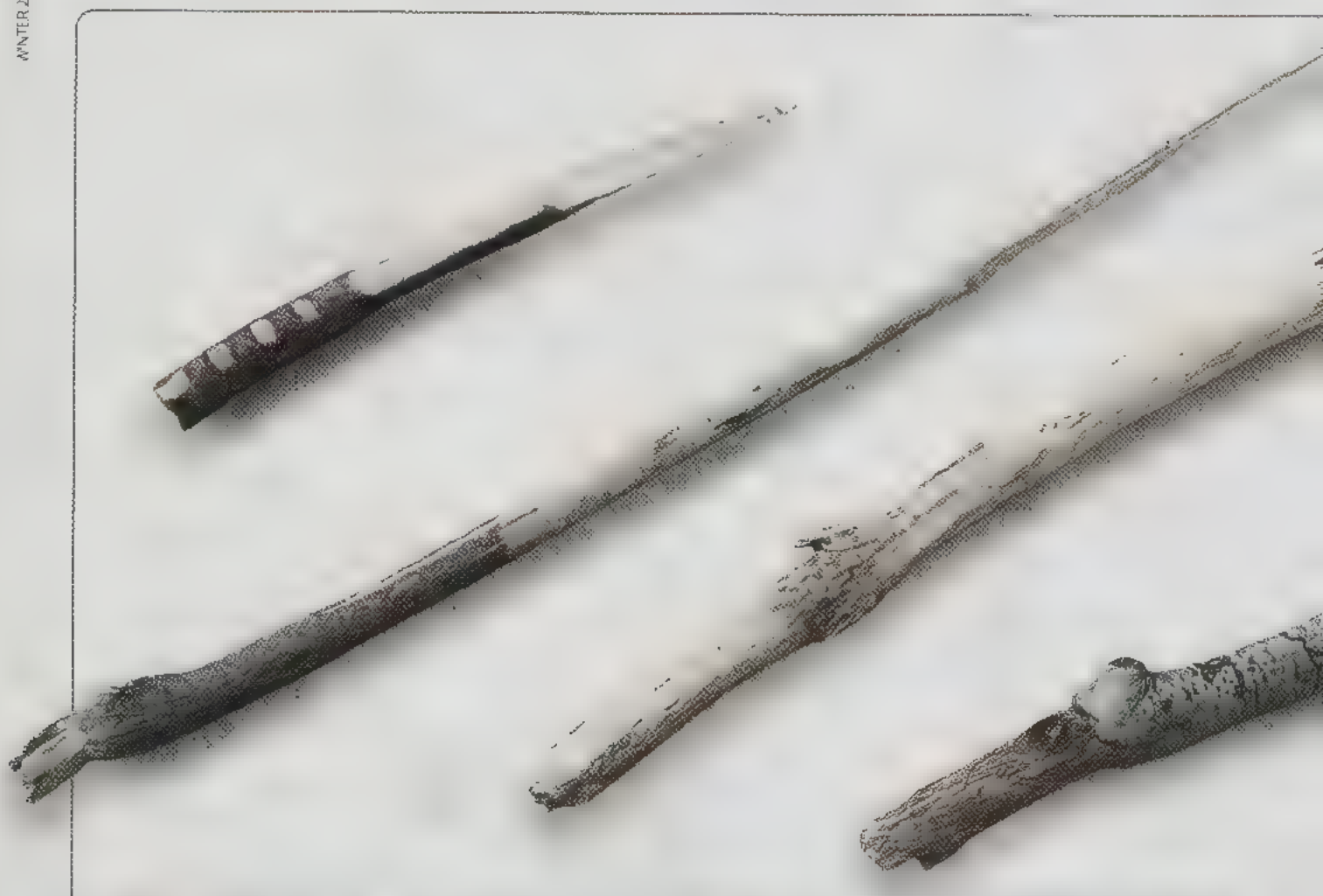
Piercing Weapons: These are much more versatile for survival situations, but also more difficult to create. These weapons are designed to slash or stab, and include shivs, spears, pikes, knives, and swords. If you're in an urban setting, you'll be likely to find any manner of cutlery, scissors, or even a letter opener to use or modify into a spear. In the wilderness, a simple sharpened stick of any length is a tried and true implement of defense.



Blunt force weapons can be as simple as a rock lashed to a stick. However, don't mistake their lack of complexity for a lack of effectiveness.



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IMPROVISE TO SURVIVE

The Art of Building Effective
Makeshift Weapons

By Patrick McCarthy

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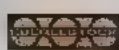
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Conclusion

A riot is a scary, yet survivable event. The first and most important step is to stay informed of the situation as early as possible. The TV, radio, and internet can provide some news, but they'll be biased and not necessarily up to date. Social media can sometimes provide local info, but they're even less reliable for accuracy. Try to discover where the disturbance is located and why it's happening.

Then communicate your situation frequently with your loved ones while the grids still up. Tell them where you are and what you plan to do. That way if you lose contact, they'll have a general sense of where to look for you when it's safe.

Once critical mass has been reached for a riot to form, one way to stay safe from a roaming mob is to hunker down and avoid the streets — unless you're in a position like our story's shopkeeper trapped in a looter's paradise. While firearms, surveillance cameras, security curtains, and bullet-resistant glass can provide added safety, they can't be relied upon as the only solution against a legion of marauders.

This brings us to the other method to survive civil unrest: blend into the crowd. Whatever topic sparked the rioters, yell what they yell, chant what they chant, and say what they want to hear. One thing always holds true: the bigger the crowd, the lower the IQ of the mob mentality. If you find yourself in the middle of a riot, try to make your way to the edges and away from the crowd. But as you make your escape, be very careful not to get pushed up against a wall or fence. You could be crushed by the press of people. Seek a safe haven to hole up until the crowd disbands, and if you hear nearby breaking glass or smell smoke, move to a new hiding spot. ☘

**WHAT
IF?**

About Our Panel:

Tim MacWeich



Tim MacWeich is a professional speaker on preparedness, survival, and the upcoming financial crisis. He is the author of the book *Survival Manual: You Can Survive Anything*. He is also a frequent contributor to *Off Grid* magazine. For more information, visit www.timmacweich.com.



Chuck E. Johnson is a 20-year veteran of law enforcement with much of his experience as an instructor of firearms and tactical training. He served as a Virginia State Trooper before moving to California where he worked for the California Highway Patrol. He is currently a senior instructor at Survival Performance LLC. He is also a frequent contributor to *Off Grid* magazine. For more information, visit www.chuckejohnson.com.



Patrick McCarthy is a freelance writer, editor, and photographer with an avid interest in survival and the outdoors. He has been a frequent contributor to *Off Grid* magazine since 2010. Patrick McCarthy is also a frequent contributor to *Off Grid* magazine. He currently resides in Tustin, California, and works as a marketing manager for a car parts company.

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A squad of buff men in nice suits entered the lobby from a side office. Each one with a coiled radio earpiece in his ear and a pistol in his hand. They must be hotel security. Then I realized how it all looked. Three men were at the door during a riot. Two with their faces covered, banging on the front entrance. I wouldn't have let them in either. So much for the hotel idea.

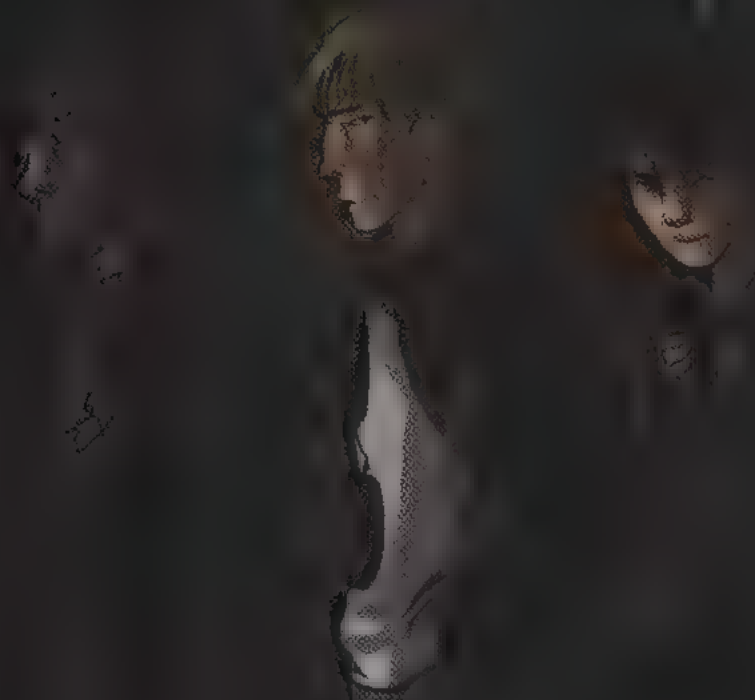
We resumed our tense trek, passing burning cars and drug-dead looters. It seemed like our frozen odyssey would never end. For morale, I handed out some of the snacks and drinks. Though the drinks were now basically sushies or outright ice, the rock-hard granola bars were edible and did seem to give my boys some energy. "Only three blocks left," Damon said.

The snowfall started to diminish when I turned the corner and saw the most beautiful sight that entire day: an immense line of police officers, dozens deep. In fact, hundreds of officers in riot gear. Some were on horseback, in vehicles, on motorcycles, but most were on foot and preparing to march.

A queasy feeling gripped my stomach. We'd already been mistaken for looters and slipped past a whole army of them for a better part of the evening. Would the police think that of us as well? Would they even let us pass? Our radio continued up the sidewalk, as if the police were not even here. But as we drew near to them, several officers stopped us. They asked for ID and to look in my backpack. I explained our ordeal and our destination. I silently thanked God that Damon had his driver's license with his address, legitimizing our nearby destination. Fortunately, the orders were given for the officers to advance, and they decided to let us pass, mainly because they had more important things to do. I nodded, thanking them. I let out a huge sigh of relief as we slipped past the officers.

After two more blocks, we finally made it to Damon's apartment. He practically sprinted to the thermostat and turned up the heater. The warm air felt like fire against our frostbitten faces. Damon offered me and Rick a couple of beers from the fridge. Sure, my drink was cold, but I needed it. After hours of raw nerves, frigid temperatures and braving the hordes of rioters, I finally felt that we were safe.

Don't look
afraid.
We have to
blend in.





motivated my increased security protocols, but I never wanted it, never wanted to work inside a bullet resistant box, but what I wanted and what I needed were two entirely different things. Along with the protective enclosure, security cameras provided me a full 360-degree view outside the building. And what I saw was not good.

A group of marauders, 20 to 30 strong, had descended upon my store and several of the "leaders" were kicking and hitting the front security screen in an attempt to breach the building. I yelled to Damon and Rick, "Grab the hose and hook it up to the spigot. Now. Get up here when you're done!" I grabbed my cellphone and made a quick call to my son to inform him what was happening, with instructions to call the Michigan State Police. If anything did happen to me, I wanted someone other than the locals to know what caused my demise, I asked him to be ready to come pick me up at the store if needed. While I did have my own vehicle in the back parking lot, I had no way of protecting or securing it. And I had no way to know if it would be in drivable condition when I finally got to it. My son acknowledged that he'd be ready for my call and could reach the store in about 30 minutes.

My two employees came running to the counter. "Ain't set, boss," Damon said, looking a bit nervous, but trying to sound brave. "Now what?" I told them the plan was for them to stay inside the security counter and to call my cellphone. I was going to the roof with the hose. I wanted them to watch the cameras and tell me where the mob was moving around the store. They understood the plan and locked the security door as I left for the back of the store.

After getting dressed as warmly as possible given the circumstances, I dragged the hose up the access ladder in the store to the roof. The roof was flat with a small knee wall that ran around the circumference of the building. It afforded me a little protection and allowed me to move around with a small degree of concealment. From the roof, I could hear the chanting, laughing, and cheering—even clearer now. Lying prone, peeked over the knee wall, I could see a large part of the group through the falling snow. Even on the roof, I could feel the vibrations of the blows to the security curtains shaking the building. Those curtains had done a good job so far, but I didn't know how much longer they would hold. I held the nozzle of the hose just over the knee wall and squeezed the handle. A flood of freezing water rained down on several subjects attacking the security screens. Several seconds passed before the thugs realized exactly what was happening. They were thoroughly soaked in sub-zero temperatures, trying to run out of range of my hose amid yells and curses. *Those thugs will be hypothermic in 10 minutes if they don't leave and get out of those wet clothes,* I thought to myself. The first wave had been repelled.

Through the hoots and jeers of the crowd laughing at the drenched rats running around, my initial success quickly faded. Some of the crowd accepted my defense as a challenge and began throwing

everything that wasn't tied down at me and the building. They wisely kept the red stance from my nose, rushing up to throw some object and quickly retreating. I was willing to play this game as long as I could, but after a couple of hours the cold was quickly affecting me, too. Everything was numb. Peering over the wall, I observed one particularly defiant soul push through the crowd and walk right up to the front of the building. Rising up to drench the bold rat, I was greeted with a steady cadence of pops ringing out from his pistol. "F**k me," screamed, as I dove behind the knee wall. I wasn't about to randomly shoot back into a crowd, and the roof was no longer a safe option. Checkmate. I needed to get inside and work my way back to the security counter.

Climbing down the access ladder, I could hear more shots zipping through the security screen. Reaching the counter, my two wide-eyed employees opened the door and let me in.

"Damn, dude. They're shooting at us!" Damon screamed.

"Thank you, Captain Obvious!" shouted back. "Call the police again. Let them know we're getting shot at."

Looking up, I immediately saw my investment in the security counter had paid off. Two shots had randomly hit the security glass, and one would have injured someone had the glass not stopped it. Meanwhile, Damon had miraculously reached a live voice and was conveying our situation. Then, he shook his head as he put his phone away. "I got through, but the operator said everyone was getting shot at and they would send someone as soon as they could."

"We as long as we stay in this box," said "we'll be OK." At that exact moment, Rick pointed to the camera covering the back of the store and yelled, "Who the hell is that?"

Four men with rifles jumped out of the SUV and moved toward the back door. I pulled my Glock from its holster. "They are not getting inside this store," said Damon, calling the cops again. "Let them there's about to be a gunfight!" I moved to the back of the store and took up a position to engage anyone who forced their way through the back door. Suddenly the back door erupted with banging sounds. I raised the Glock ready to shoot should the door break loose. Over the sound of the banging, I heard voices arguing, but then I recognized one. "Dad, it's Jacob. Open the door!" My son and some of his friends had arrived.

I had never been so happy to see my son (well, except maybe on the day he was born). We all piled into the SUV and left the store. The four-wheel drive handled the snowy roads just as easily as the four rifles would have handled any predators looking for an easy meal. Thanks to the quick thinking of my son, we all made it home safe. Several days after the riots finally ended and relative calm returned to the area, the store had been ransacked and set on fire. It was a total loss. Insurance covered most of my losses, but I choose not to rebuild. Retiring to the country seemed a more appealing option.

SURVIVAL EXPERT: **Tim MacWelch's Approach**

As the looters tore and kicked at the metal security screen, yelling like animals, the real danger of the event began to sink into my mind. If those people broke through the barricade, they would destroy my livelihood—and they might beat me to death. Just for kicks. And if I tried to slip out the back, I'd be out there in the midst of them.

And I wasn't just worried about myself. My two employees are young enough to be my sons. Their safety was my responsibility too. Staying off the streets would be the smartest thing to do, if only I weren't sitting in a prime target for looting. Watching the news broadcasts didn't help. They described the mayhem on the streets—my streets, my hometown. Aerial footage from news helicopters showed thousands of people in the streets. Vehicles and buildings had been lit on fire. One piece of footage showed a man being beaten by a group.

Another attempt to use my cellphone and the landline proved fruitless. All of the phone lines were jammed. The news said that buses, taxis, and the Detroit People Mover light rail system had been suspended. We had no way out of the neighborhood, except on foot.

My home in the suburbs would be unreachable, but I had a rough idea of where my employees lived. Both lived on the outskirts of downtown. After a quick discussion I found out that the youngest man, Rick, lived closest to the store, about 15 blocks away—but on the other side of the riot's epicenter. There was no way I'd risk our lives on that trek. The other worker, Damon, lived 22 blocks away from the store, but away from the main rioting. We agreed that we'd head there or at least try to.

After stuffing the store's cash into my wallet and jacket pockets, I loaded up our only backpack with snacks, drinks, and a box cutter. Then I faced the back door. Scared of what might be on the other side, I pressed my ear against the door and listened for a few moments. As quietly as possible, I unlocked the door and opened it a crack. The alley was dark already, even though sunset had not quite come. I saw some movement by the alley opening, so I ducked back inside to wait. The air was cold and raw with the snow flurries falling. None of us were dressed for a long walk in the open.

After another peek down the alley showed that the way was clear, we exited and locked the two deadbolts on the dirty metal door. The young men agreed to stick with me, as they seemed a most as frightened as I was. Near the first open street, I took a deep breath and plunged into the stream of foot traffic. Some people had bandanas and scarves covering their faces. These, I suspected, were up to no

good. Other people were laughing and joking, reveling as if this were a tailgate party at a Red Wings game. Then a few other people scurried by with frightened expressions and quick movements. And no sooner than I began to think that they should probably play it cool, a terrified woman got socked in the face by a girl and her boyfriend. The couple kicked off a "boot party" on the poor woman before running away

with her purse.

Should we help her? I asked myself. *Not with a grand in cash stuffed in my pockets and two scared guys expecting me to get them out alive.* My conscience shouted back.

I pulled my boys close and whispered, "Don't look afraid. We have to blend in." Damon nodded and pulled the front of his undershirt up to his nose, covering his face. Rick followed suit, popping his jacket's collar and zipping it up at the way past his mouth. In that moment, I had hope that this charade might just work.

The wind began to pick up and the snow fell a little harder, though this didn't dampen the rioter's parade. As we threaded the crowds block by block, I witnessed trashcans hurled through windows, small cars being flipped over, and fires being lit everywhere. My nerves were beginning to wear down, and I needed this to be over. As our trio turned a corner halfway to the safe haven of Damon's apartment, I walked right into a huge muscular man who was stinking of liquor. Startled, we all stopped. He was lightly dressed despite the cold, and his knuckles were dripping blood.

"What do you think about that verdict, man?" he asked. Realizing there was only one right answer, I shouted, "It's bullshit! Those courts are out to get everybody! I can't even believe it. I just can't believe it." The big man simply grunted and headed off with a slight stagger. Another test barely passed.

Another block passed, and soon the crowds started to thin. But we weren't out of danger yet. Thugs still roamed the streets, looking for easy targets and potential victims. And all three of us were bitterly cold. Frostbite was a serious concern now. But eight blocks more, and we'd be at Damon's apartment. As I poded forward, we drew near to something I hadn't thought of before—a hotel. It'd be the perfect place to hide out until the looting subsided. There were two hotels between my shop and the apartment. Since the lobby of the first one was on fire, the second would have to be our refuge. This hotel was undamaged, and I had plenty of cash to pay for a room.

"This might just be your lucky day after all," I said to my boys as I pulled the hotel's door handle. But it didn't budge. I grabbed it with both hands and yanked hard. It wasn't frozen shut, it was locked. My hope began to dissolve. I knocked on the large glass window, but there was no one inside. I banged on the glass harder, and suddenly



The Scenario



SURVIVAL SITUATION



YOUR CREW



LOCATION



TIME OF DAY



LEVEL OF DIFFICULTY



LENGTH



SEASON



WEATHER

The Set-Up

Employees working, bored
on the news that a

that the p
(repeated)

Your Gear

The Complication

begin trying to

is there, it's

they leave

no they don't

out the back door and brave the

with you for protec



Even on a good day downtown Detroit can be a rough place to call home, but we were about to find out how bad it really gets. We had been hearing rumors of unrest in the city for days now, but halfway into my shift the televised news reports were beginning to get increasingly ominous. The rioters had tired of simple breaking and entering, and were now turning to mob violence. Destruction for the sake of destruction — torching buildings, flipping cars, and viciously beating anyone who stood in the way.

Earlier in the morning we had seen police cars screaming down the street, sirens blaring. Hours later I spotted one headed the opposite direction. No sirens this time. Around 2 or 3 p.m. we heard the first gunshots — not an uncommon occurrence in this part of town, but never with this frequency. Then the sounds started getting closer. I made the decision to close the doors early. It's not like we had seen any customers for hours, anyway. Snow was beginning to fall as we pulled the security gates closed.

Then reality set in — none of us were going to make it home that night. The sounds felt like they were closing in from all sides. Smashing glass down the block, cars blasting by the shop at full throttle, more staccato pops of gunfire in the distance.

Before cashing out the register I told my two employees, Damon and Rick, to close up shop and kill the lights. It would draw too much attention to simply walk out to my truck and drive away, and it was much too cold to make it far on foot. Besides, a middle-aged man and two scrawny college kids would make for an easy target on the streets, especially in our work uniforms. We'd have to hunker down for the night in the back office, and head out, just before dawn once the violence subsided.

The evening hours ticked by as we huddled around the tiny security camera monitor, watching the footage of shadows running by underneath the streetlights outside. TV news was no help — after the chief of police made a statement that the situation was under control and a perimeter had been set up, the newscast cut away to other stories, and eventually to late night infomercials. How can no one care what's going on here?

Not long after midnight someone spotted the security camera out front, and smashed it with a brick. Then the sounds outside descended upon us, with disembodied voices shouting and unseen objects shattering the storefront windows. The assault seemed relentless, but miraculously, the security gates held. Thank God — I spent extra for those reinforcements. I could hear through the wall that the pawn shop next door hadn't fared so well. Knowing that the security gate wouldn't withstand another barrage, Damon, Rick, and I agreed on a plan. We would take some supplies and the cash from the register, head for my truck outside at 4:30 a.m. (hopefully when most of the looters would grow tired and head home) and drive like hell.

FEDERAL AGENT: Erik Lund's Approach

The sound was as clear as an emergency siren klaxon in a submarine. The meta-security curtains at the front of the store were being kicked. Jumping to my feet, I left the back office to see how well the curtains were bearing the attack. "Stay here," I told Damon and Rick, my two young employees.

I mentally cursed myself for allowing the news coverage of the escalating riots to distract me. I should have left when I had the chance. After all, angry protesters were gathering, before the mob mentally broke loose. I could have simply driven home, but now that was no longer an option. The falling snow meant the roads were likely to quickly become slick and clogged with vehicles trying to leave the danger zone, or with those trying to get into the area to participate in the riots. There's nothing like a good riot to bring out the party

animals. Groups of marauders were roaming around, making their way toward the excitement of the riots. The thought of being stranded or carjacked in the middle of a Detroit winter snowstorm had the sex appeal of Nancy Pelosi. The idea of packing up and sacking up for a bug-out like back home at night with temperatures hovering in the teens had even less. This meant I would make my stand. Here at my store, I had food, shelter from the elements, good communications, a reasonably defensible structure, and a firm location should emergency services be needed regardless of their response time. This would be my Alamo.

Walking to the front of the store, I quickly retrieved my Glock 17 9mm pistol from its secure place behind the laminated security glass enclosure that protected my register. I slid two additional magazines into my pants pocket. Several unsuccessful robbery attempts

"I mentally cursed myself for allowing the news coverage of the escalating riots to distract me. I should have left when I had the chance."



AVERAGE JOE: Patrick McCarthy's Approach

In the early morning hours, once the noise outside had died down I grabbed my backpack and silently loaded it up. Bottles of water, protein bars, beef jerky, and the limited contents of our medical kit. Each of us pocketed a box cutter from the storeroom — not that it would do much, but it felt better than nothing. I hid onto the old, D-cell flashlight from under the counter, more for use as a blunt instrument than a source of light. It was shaking as morning approached. Was this really the right choice?

I opened the back door at exactly 4:30 to find our parking lot looking like a war zone. There was trash and broken glass everywhere, and the choking smell of ash filled my nostrils. My truck was on the far side of the lot, or at least what was left of it. Someone had smashed the windows and gutted the steering column. The tires were slashed. My heart sank as I realized it wouldn't be taking us anywhere. Rick looked terrified, but Damon said he thought we could make it to his apartment about a mile away. It was starting to get light, and there was no turning back now. The apartment would have to do.

We walked quickly as dawn approached, feeling as if we'd find another mob around every street corner. Fortunately, only a few stragglers were out at this hour, and we were ignored. I think I may have seen a body slumped over in an intersection, but I definitely wasn't going to go get a closer look. After what felt like an eternity, we made it to Damon's complex, where the wrought-iron security gate out front appeared scarred but intact. Inside the building it was eerily quiet. We made it to his apartment, bolted the door, and practically collapsed. It's amazing how much covering a mile in fight-or-flight mode takes out of you.

The three of us holed up in the one-room apartment for most of the day, finally able to eat something and watch the news. It was pretty clear that Damon intended to stay here until the riots were contained, and I couldn't fault him. But Rick and I just wanted to get home to our families. I knew Laura and the kids would be worried sick by now despite the text messages I sent before my battery died. I tried to call them using Damon's landline, but I couldn't get through. All the lines must be jammed. So the two of us decided to stay the night and head out again first thing in the morning.

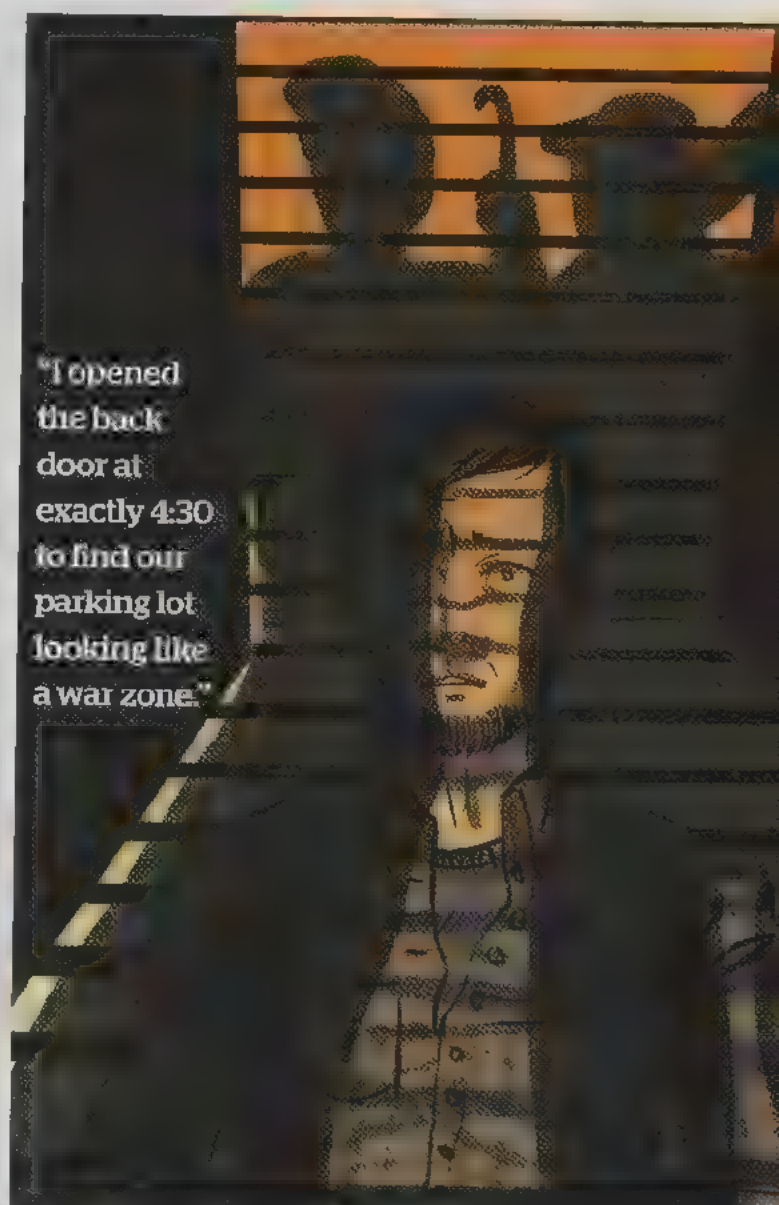
Despite the exhaustion, I found myself barely able to sleep that night. Maybe it was adrenaline wearing off, or just plain fear at what the day would hold. In the early morning hours, we talked with Damon to hash out our travel plans. Although he couldn't afford a car, Damon mentioned that his roommate had an old hatchback in the parking garage. The roommate was out of town for the week, and Damon figured that he wouldn't mind if we borrowed the car — getting it out of the city would probably save it from the same fate as my truck, anyway.

After topping off our supplies, grabbing the car keys, and picking up an aluminum baseball bat from the apartment's closet, Rick and I made our way to the building's attached parking structure. Eyes adjusting

to the twilight, we found the hatchback where Damon said it'd be. We were in luck — due to its ratty appearance, it had been overlooked by the mob. We hopped in, and it sputtered to life as I turned the key.

Pulling out onto the street, the engine noise seemed deafening against the early morning's silence. We drove block after block, tension slowly fading as we navigated through the abandoned cars and rubble. A few miles later the roads cleared, and we eventually rounded a corner to find a handful of inked metal barricades blocking the street. A small army of police officers stepped out from behind the barricade, shotguns and AR-15s in hand. They weren't messing around. This must be the "containment plan" we heard about on the news. After a few minutes of interrogation about where we got the car (and why we had a baseball bat) and showing them our IDs and my business card, we were allowed to pass through. As we headed out of the city into the gray sunrise, my anger at the police's complacency turned into a stark realization: I would never be so unprepared again.

"I opened the back door at exactly 4:30 to find our parking lot looking like a war zone."



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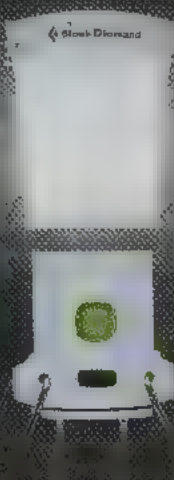
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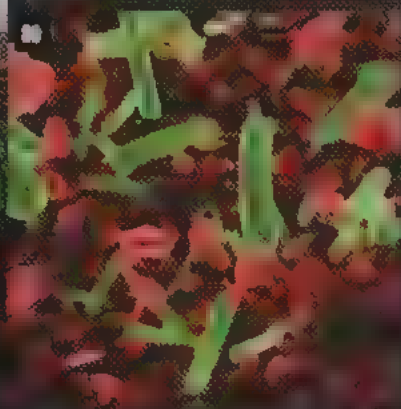
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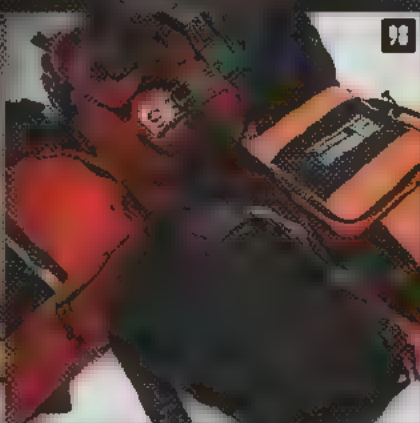
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OFF TRACK



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On Page 42 of the Feb. 2014 issue, we explained the stick shadow method of finding north using nothing but a stick, a couple of rocks, and sunlight. We must clarify that this method works best at midday and usage at other times may affect the directional accuracy. However, sunrise and sunset can also assist with directional orientation since we know the sun rises in the east and sets in the west.

Also on Page 7 of the same issue we incorrectly listed the handle material of the Red Horse Knife Works APC folding knife. Its handle is available in G-10 or titanium. For more information go to www.redhorseknifeworks.com. We apologize for any inconvenience this might have caused.

EDITOR'S LETTER

A Look Back and a Way Forward

And in a blink, 2014 is gone. Last year started very much like the way it ended.

Vicious winter storms pummeled the East Coast—so much so that the Federal Emergency Management Agency (FEMA) issued “major disaster” or “emergency” declarations in numerous states, from Pennsylvania on down to Georgia. But Mother Nature wasn’t the only threat in early 2014. A storage tank spilled a little-known coal-cleaning chemical in West Virginia, preventing 300,000 residents from using the local water supply. Meanwhile, on the Left Coast, the Colby Fire (caused by an illegal campfire) scorched a most 2,000 acres and destroyed six homes north of Los Angeles.

Spring didn’t bring much relief. Washington State faced the deadliest mudslide in U.S. history last March when more than 40 people were killed and an entire neighborhood was obliterated. That same month, Montana was hit with widespread ice jams that caused FEMA to declare a major disaster. The summer of ‘14 brought the usual dangers: more wildfires, more severe storms, more flooding. Tornadoes whipped through central USA, including Iowa and Nebraska. Autumn saw the volcanic eruption and lava flow in Pahoehoe, Hawaii, and the start of the overhyped Ebola scare in Texas and New York. And Old Man Winter returned and brought enough snow to blanket Buffalo, New York, and much of the Northeast practically overnight. Then there was the renewed civil unrest in Ferguson, Missouri, after a police officer was cleared in the fatal summer shooting of an unarmed teenager.

As I write this column during the Thanksgiving holiday, the East Coast is being hammered by yet another snowstorm. And I didn’t even mention the two lone-wolf terror attacks in Canada or other major emergencies in North America. It could go on, but you get the point: a crisis can strike anywhere at any time.

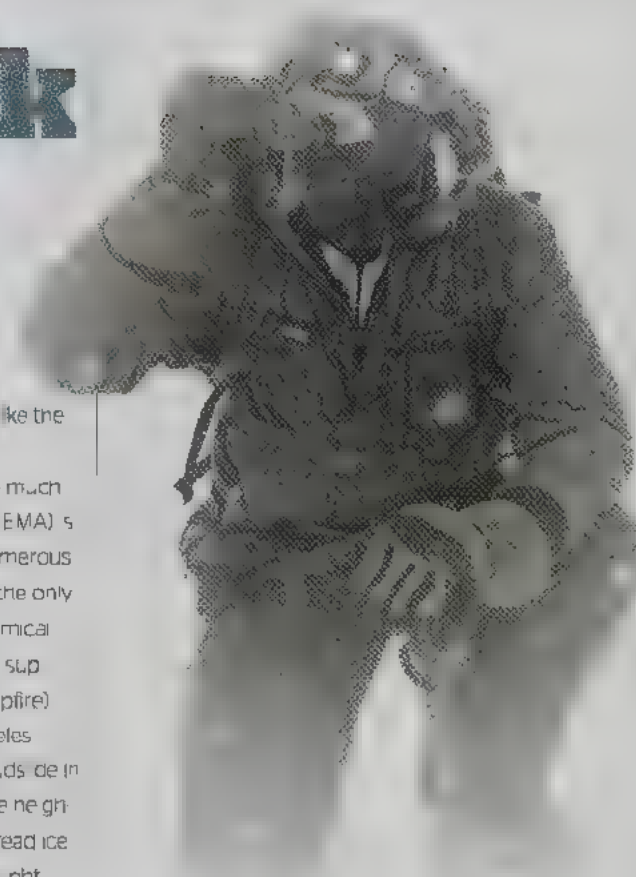
Look back at the calamities of 2014 not to stoke fear or paranoia, but rather to spur action. The most constructive thing we can do is learn from our past (whether ancient history or last week’s news) and figure out ways to be better equipped so we can not only adapt, but grow. While no one except Yoda and C3PO the Magnificent can predict the future, you can certainly expect adversity in 2015—and you can overcome it with well-researched knowledge, regular training and practice, and an unshakeable mindset that you are a survivor.

So in this, the sixth edition of OFFGRID, we’ve packed it full of insightful articles by outstanding subject-matter experts. Survival guru Tim MacVetich explains key concepts to surviving the winter if you’re stranded in your car. Former Marine scout sniper Pete Palma shares survival tips he learned from Louisiana’s homeless. And security and continuity consultant Jim DeLozier shows us how to make water safe with improvised filters. We’re also debuting *Hands On*, a new column that offers

honest reviews of the latest and greatest gear and gadgets. The premiere edition focuses on lighted knives. Plus, we have a buyer’s guide on off-the-shelf bug-out bags, a feature on handling health emergencies while abroad, and a tutorial on makeshift weapons should you ever find yourself empty-handed. Oh, and we put our digestive systems on the line to bring you a canned meat taste test. Bon appétit.

I’m proud of this Winter 2015 issue and really hope you enjoy it. But if you don’t, or if you think there are ways to improve it, let us know. Post your questions, comments, and suggestions to our Facebook page at www.facebook.com/OFFGRIDmag or via email at offgrid@enthusiasnetwork.com. Without your feedback and support last year, OFFGRID couldn’t have become the successful quarterly publication it is now. Let’s take on 2015 with a mutual desire to share information and to promote a better prepared, more self-reliant society. So get out there, learn, apply, prepare, and practice.

My best
Patrick Vuong



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8 Footwear

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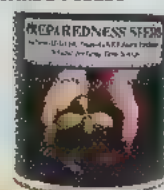


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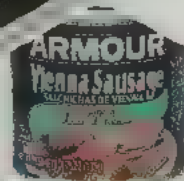
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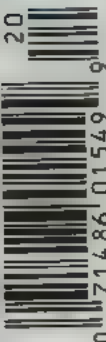
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HEAD SET

In Season 3, Episode 1, "Seed," Rick Grimes (front, center) leads a team of post-apocalyptic survivors as they cover each other's backs, to make a walker-free haven in an abandoned prison.

6. Smelling is seeing

In Season 1, Rick and Glenn (and four seasons later, Carol) shambled among walker herds after covering themselves in zombie guts to disguise their human scent. Effective hunters often use both clothing and scent as camouflage and lure. Smell can be a deterrent, too: Some farmers employ coyote urine and human hair to protect their food source from rabbits and deer.

7. Shelter isn't always safe.

Don't assume an already-standing structure is perfectly safe and pest-free. Look in all the nooks and crannies for dangerous surprises before you hang your hat. Remember the Tombs in Season 3?

8. Gather food where you may.

No, not like the Terminans. (RIP, Bob's leg.) But do look beyond the grocery shelves. Like Father Gabriel's basement stash from the food drive in Season 5, a termite mound can be a

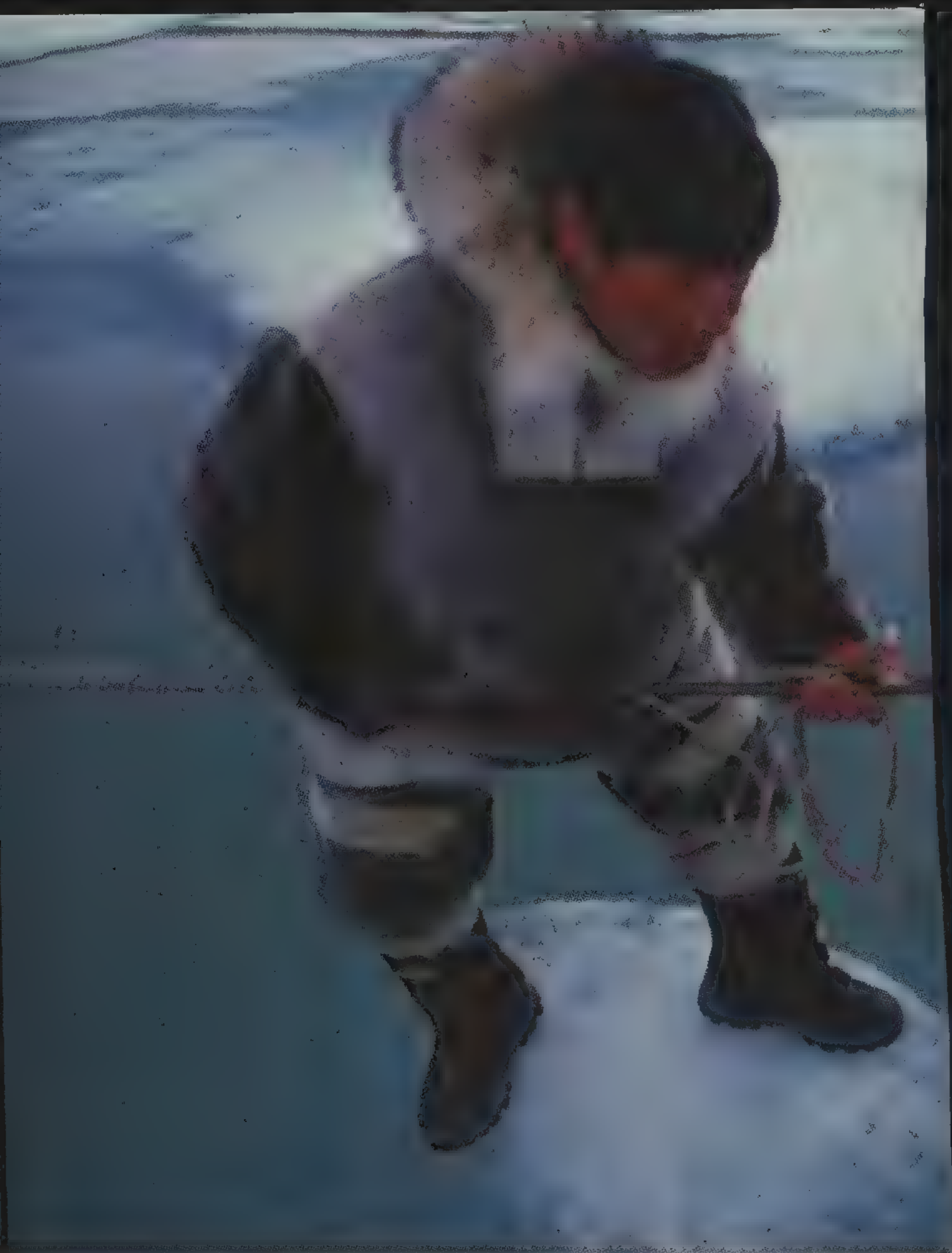
much-needed protein source. Just make sure it's a non-toxic, uninfected source first. (RIP, Bob.)

9. Learn how to wield your tools.

Things like fire starters are a lot less surefire if you don't have practice using them. Think back to Shane's gun training sessions near Hershel's farm in Season 2. They're what made Andrea go from not knowing how the safety works to being a stone cold shot the night of the fire. Patricia, on the other hand, could have used a little more learning.

10. Be aware of your surroundings.

As they walked into the unfamiliar Terminus in Season 4's finale, Rick noticed that one Terminan was wearing Daryl's poncho and another was holding Hershel's pocket watch. Trusting your senses can sometimes mean the difference between being the hunter or the hunted.



10 Things I Learned From **THE WALKING DEAD**

Though all five seasons of the show are fiction, the survival strategies are real. So are the spoilers.

1. Know when to make some noise.

When you're exposed without shelter, put up noisemakers around the perimeter of your camp site to alert you to trespassers—animal or otherwise. Empty tin cans tied on a string work. Bob, Sasha and Maggie used this pretty effectively in Season 4, when they were back in the wild following the Governor's devastating prison onslaught.

2. Use whatever you've got on hand to get the job done.

Walkers don't stop coming just because someone's left their knife in their bunkroll. *Walking Dead* survivors have dispatched zombies using screwdrivers, boot heels and a machete scabbard, and Rick took out a living villain using just his teeth. Daryl Dixon even used a walker's skull to bash in an attacker's. If you're in a survival situation, you'll need to use whatever works, too. Sticks become shovels, socks become water purifiers, and so on.

3. Make your own luck.

Don't stay in a dangerous situation and hope to get rescued. But also don't discount an SOS. Communicate however you can. Exposed because she was walking along train tracks in Season 4, Maggie wrote Glenn notes in zombie blood and guts alerting him to her direction—and kept walking.

4. Always make sure your water supply is clean.

After all those gunfights and herds of walkers, it was Patrick's sneezing over the water barrel in the opener of Season 4 that nearly took down the entirety of Rick's crew.

5. There is strength in numbers.

There's something romantic about you against the world, but you might not want to go it alone. Loners tend to go a bit nuts. Rick and company are pretty good at keeping their "people" in one piece. Plus, in a group, as Hershel said, "Everybody's got a job to do."

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3 INFECTIONS DEADLIER THAN

By John Teator

W

hile mainstream media spotlight the flu, it's easy to forget that there are other deadly infections out there. Here are three of the most dangerous.

Influenza

Most commonly caused the flu, this viral infection attacks your respiratory system and comes in three types: A, B, and C, and many strains.

Up to 49,000: Deaths per flu season in the USA

200,000-plus: Hospitalizations per season in the USA

6 feet: Distance flu can spread via coughing, sneezing, or droplets

Symptoms: Fever, cough, sore throat, runny nose, and fatigue

Prevention: Wash hands with soap often. Vaccines might help, but effectiveness depends on age and health of patient and the virus's virulence.

MRSA

Methicillin-Resistant Staphylococcus Aureus is a bacteria that's resistant to common antibiotics and can lead to threatening infections in bones and internal organs.

5,500: Avg. deaths per year in the USA

94,000: Estimated number of cases in 2005 in USA

Spreads: Primarily in healthcare settings, but also via skin-to-skin contact

Symptoms: Red, swollen, painful skin lesions; fever; and fatigue

Prevention: Wash hands with soap and water, or use hand sanitizer. Clean wounds with iodine or other antiseptics.

HIV/AIDS

Human Immunodeficiency Virus and Acquired Immune Deficiency Syndrome are terms that weaken the immune system, leading to tumors and other complications.

15,500: Deaths per year in the USA

1.1 million-plus: People living with HIV in the USA

1 in 6: People with HIV in the USA

Spreads: Through sexual fluids, blood, and breast milk

Myth-busting: Coughing, sneezing, and handshakes, hugs, and kisses don't spread HIV

Prevention: HIV can't be passed through saliva, sweat, or tears. Use condoms and avoid sharing needles.

EMERGENCY

Centers for Disease Control and Prevention
www.cdc.gov

National Institutes of Health
www.nih.gov

Mayo Clinic
www.mayoclinic.org

A person wearing a dark, hooded garment is seated in front of a large, intense fire. The fire is a mix of bright orange and deep red, with a large, glowing orange flame rising from the center. The person's face is partially visible, looking towards the fire. The background is dark, and the overall atmosphere is one of warmth and intensity.

TEMPERATURE SEPARATION

The average campfire reaches about 930°F after burning for three hours—nearly hot enough to melt silver. At those temperatures, a hand will begin to feel too warm after only a few seconds.

SURVIVORMAN

Essentials



Les Stroud—a man who's spent the last decade confronting the wilderness alone with only his skills and a camera—holds forth on zones of assessment, wind and the unsung power of a hunk of cheese.

We can handle the pouring rain all day. Oh, now you have a canoe mishap and you're at the side of the river. That's two lemons. Not such a big deal. All you've got to do is dry off, repack the canoes and head downstream. But, if out of that dumping in the river, somebody broke an ankle, that's three big lemons. Three big, fat lemons. And, usually, on the third, that's when it's like, "We have to do something about this." Those three lemons pop up and change what you're gonna do.

You've also said that in a survival situation you should keep moving. Why?

The whole "stay put"—that's a bit of an outdated thing. You have to start thinking, "OK, first of all, does anybody know where I am? Is anybody expecting me? Will somebody come looking for me—yes or no?" It's a big

rain's coming in, you're running out of food, somebody's injured, you're a long way from home, nobody's expecting you—no. You need to get up off your butt and start proactive survival.

You decide to make a move. Push forward or retrace your steps back?

Sorry to premise every single answer with "it depends on the variables," but it does. I would say, more often than not, retrace your steps back out. The problem with moving forward is you are moving forward into the unknown. It may be like, "Oh, my God. It's 50 miles." Yeah. But you know that 50 miles.

What is the essential thing I can do to give myself the best chance of getting out?

I'll give you three. My number one thing of all, in all different

without MapQuest. How to tell East from West, and how to walk in a straight line through the wilderness. And number three, know how to keep yourself warm. If you're in a cabin and you've gotta travel somewhere and you don't have a coat, are you gonna think smart enough to put newspapers in your pants? Are you gonna wrap your hands in a rag filled with moss? Those three skills together will do you very well

How do you walk a straight line in the wilderness?

It's not easy. You can get turned around so easily, and we tend to favor our right leg, so we do these big circles. One little trick is, if I look straight ahead and between here and there is a bunch of trees, I purposely go around the right side of one tree and the left side of the next tree, right side of one tree, left side of the next tree. And that kinda sorta keeps you a little straight. Another way is, if the sun is shining, and you're walking this way, and the sun is basically positioned just over the right edge of my right eye, well, let's keep it there. Of course it'll move. But generally speaking, I can keep it like that for the next 15 or 20 minutes and be in a fairly straight line. OK, now it's going to be on my temple. Now I'm going to have it on my temple for the next 20 minutes or so. And so on.

What don't you leave home without?

I always make sure I've got a surefire way to get a fire going.

"It's not about, 'Well, I'll just be gentle and wait here and everything'll be alright.' No, no, no, no, no."

variable, but I personally believe surviving is a proactive endeavor. And, everybody that I've ever seen learning survival under my tutelage that is extremely passive does very poorly. It's not about, "Well, I'll just be gentle and wait here and everything'll be alright." No, no, no, no, no. Storm's coming in, weather is coming in, cold's coming in,

types of situations, whether I'm in a desert or a jungle or the Arctic—get a fire going. It changes everything. You feel better, it scares the boogeyman away, it purifies your water, cooks your food, keeps you warm, creates light for you. Another one is understand and learn navigation—without a GPS, without an iPhone,

You're Canadian, so, say you're stuck out in the cold. What do you do to keep your body heat up?

Right away, you have to determine if it's windy. Wind is a deadly, deadly force when the temperatures are cold. And that doesn't matter whether you're in the city or in the wilderness. Getting out of the wind will improve your circumstances 50 percent right away. Any way you can devise to protect yourself from the wind, whether you're banking up snow or using branches or dropping down into a gulley. The point is: Get out of the way.

What's so bad about wind?

It sucks all of the heat right out of you. And on the subject of losing heat, sitting down on a cool ground sucks the heat right out of you, too. So does leaning up against a cold wall. We want to get heat back into our bodies. Jumping jacks help. I do push-ups a lot. Moving should be an obvious way to generate heat within your muscles. The difficult part is you can't do jumping jacks all day long. But you can pace it out. Every 20 minutes I'll drop and do 20 or 40 push-ups in a cold scenario. A way to get warm right before bed—I always advocate this—have a couple of good chunks of cheese. That will burn in your belly all night long and create internal combustion that heats you up while you sleep.

What predicament is more difficult for survival—extreme heat or extreme cold?

With extreme heat, you can duck behind a sand dune, hide behind a tree, wait out the heat of the

day, work at night. When it's cold, you cannot stop. You have to keep moving. You have to keep affecting your survival. You have no forgiveness. And you must always be doing something about the fact that it's cold. People often ask me where the toughest place in the world to survive is, and I always say it's not at all about geography, it's about temperature.

What is the first thing you need to find in a survival situation?

The very first thing is you must calm down. It doesn't matter what the circumstances

the night if I have to 'cause it's gonna start getting dark. Zone of assessment number three is knowing what's further afield. About half a kilometer up river, we passed a cabin. And I actually remember looking at the map, and I know that if we walk east for half a mile, if we just stay straight and walk east, we have to hit a road. Now, all of this questioning really only takes about 90 seconds. In about a minute and a half, you've ascertained all this knowledge. Well, now that you've got all this knowledge, and you're sitting down and calm, you can

"When it's cold, you cannot stop.... You have to keep affecting your survival. You have no forgiveness."

are. The next thing you need to do is to find a way out of those circumstances. How are you going to do that? Well, you're going to do that by first acquiring knowledge, second by making a decision and third by acting on it. Now, let's walk through the three zones of assessment. The first zone is what do I have on my body or in my pockets? What am I wearing? What's useful for me? And that also includes your physical shape as well. Oh, I've got a broken wrist. Oh, I snapped my ankle. Zone of assessment number two is what's in your close surroundings. OK, well, my backpack's right here beside a tree, and it's got a tent in it, and I know I can wait out

say, "OK. Here's what I think we should do." Maybe it's build a shelter and stay the night. Maybe it's get the hell out of there. Maybe it's try to signal for help. It's a thousand different variables of what you're going to do. However, at least you're now going to do it with knowledge enough and, you know, knowledge is power.

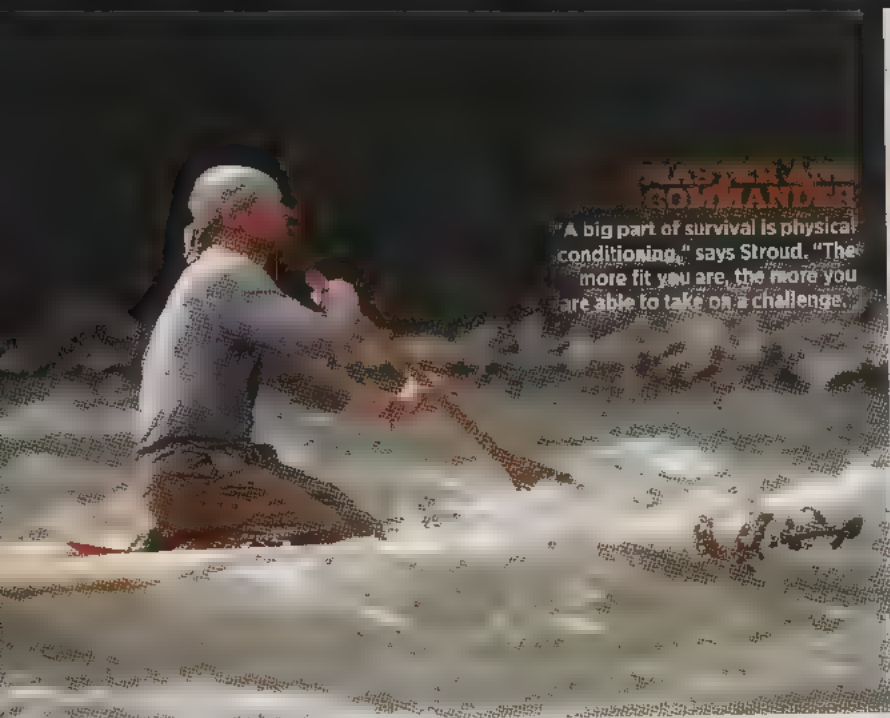
You've said: "When you have three lemons, get out." Where does that rule come from?

It's something we actually used to say when I was a guide. Obviously, it's a rough rule of thumb and variables matter. But if you're out there and it's pouring rain all day—boom, there's a lemon right there. But, whatever.

ON THE ROAD

There are 46,837 miles in the U.S. Interstate system. Of these, the longest single piece of road is I-90, which runs from Seattle to Boston—a distance of 3,020.54 miles. Only Alaska doesn't have a single mile.





MASTER A COMMANDER
 "A big part of survival is physical conditioning," says Stroud. "The more fit you are, the more you are able to take on a challenge."

It's a butane-filled lighter with kind of a torch-end on it. If I want a fire, I want it quick. I don't wanna be rubbing sticks together. Always a shelter. Even if it's a big orange garbage bag folded up small and shoved in a side pocket. Believe it or not, a flashlight. I don't like being caught in the dark. The other big thing is something to boil water in. To me, I'd rather have a pot I could boil water in than a knife.

What are some of the most valuable lessons you've learned from native peoples?

I've never been about, "It's me up against nature, up against the wild." That's not what this is about. It's learning how to work within the rhythms of the wilderness and within the rhythms of a natural environment. And a lot of native cultures reinforced and taught that. The reality is we cannot beat nature. No matter what we think and how powerful we get as human beings, we can't beat nature. One hurricane comes in and destroys all our hopes and dreams.

What are some of the bad things that maybe are hidden, or people just wouldn't think about?

A completely underestimated one that is very insidious is lack of sleep. You're scared, so you stay up all night, then you push through the day. And then you are making bad decisions and doing foolish things. You know what? You got a moment here during the day, the sun is shining—why don't you grab three hours of sleep? Otherwise, it's the small things. It's the hornets' nests and the biting ants and the little beehives and the little stinging caterpillars, or whatever. Those things are a lot more of a hassle to you than a jaguar or a lion or snakes or something like that. Those little guys are the guys to watch out for, for sure.

What do you think is the number one mistake that newbies to the wild make?

The biggest I see is the mindset that "It can't happen to me—we're not gonna be the ones who have a canoe upset; I'm

not gonna be the guy who gets turned around in the forest and loses my way on the trail." And the problem with that mindset is that you don't pack properly. You don't prepare. And another huge part of this is taking responsibility for ourselves. You can trust your guide, you can trust your friends, but rely on yourself.

What's the most scared you've ever been?

I hesitate to use the word "scared," but I don't mind using it in this one instance. It's a long story, but the reality is, I was out in a survival situation, viewing some moose, and I ended up having a 1,500-pound bull moose with a full rack of antlers chase me through the forest. I ended up going up a tree, and then I had to jump out of the tree at some point and run away from him some more. And then I had to climb into the lake and sneak up the shoreline under the water. Moral of the story: I am really good at survival. So why could this happen to me? I got cocky. You know that phrase we use nowadays, "Eh, I got this." Well, when you use that phrase in a survival situation, you are about to experience trouble. It happened to me in the Norway episode. Going down that hill to the fjord, I could've died from hypothermia. It was one of the most dangerous situations I've ever had. Why? Because I thought to myself, "Ah, it's just a walk down the hill to the fjord. I got this." And I screwed up.

ON LOCATION

During the second season of his television series *Survivorman*, Les Stroud walks across the Kalahari Desert in Africa, on the lookout for scorpions.

08

Shelter

One of the basic human needs is to stay warm and dry. But efficient sheltering goes beyond structure, from building a fire-lay to communicating to harnessing a source of energy off the grid.

38

Sustenance

Three days without water can spell disaster in a survival situation. There's a bit more time to gather food. But truly sustaining life takes savvy, research and a plan for sustenance far beyond the grocery shelves.

66

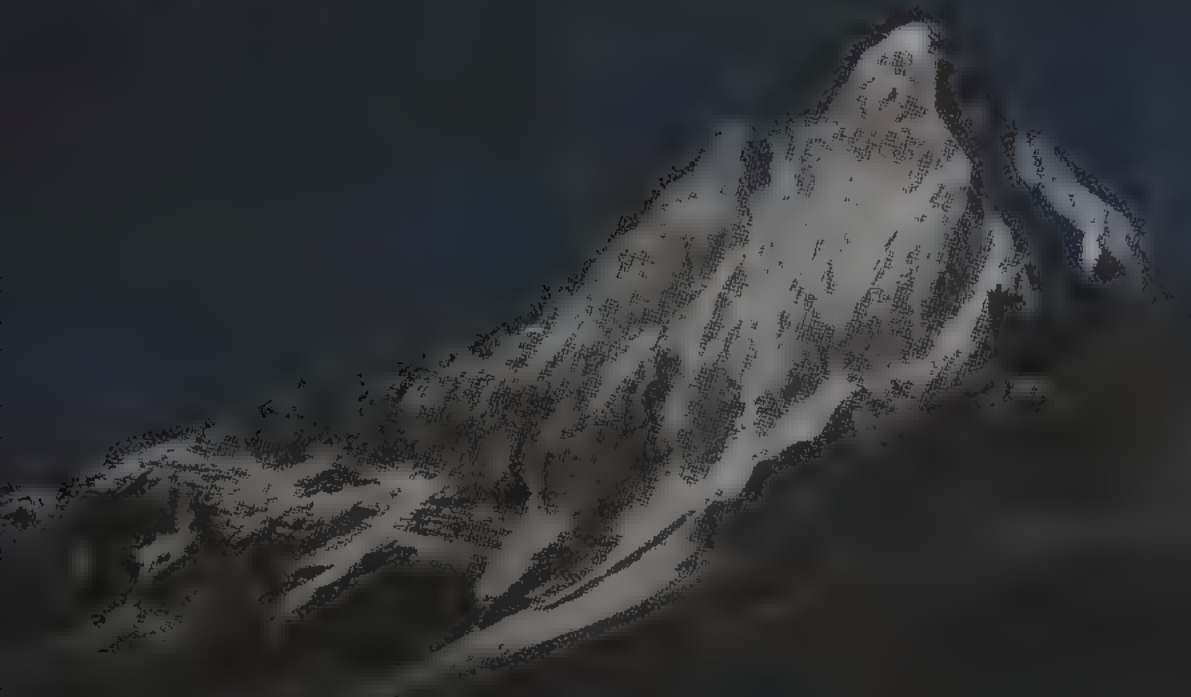
Survival

Man versus nature is a lopsided struggle humans aren't intended to win. Special Ops members, doomsday preppers, *The Walking Dead* and *Survivorman* himself offer useful tips to even the odds.



OFF THE GRID

SHELTER



SHELTER



BUILDING THE BEAST To be ham-ready, you'll need (clockwise, from left): a car battery; coaxial cable; twin lead line; copper wire; and a radio (here, the Yaesu FTDX-5000).

use. Only if they pass will they get a call sign and unfettered access to the airwaves. Once a ham, though, an operator is able to make contact anywhere, anytime. "From San Diego to the Falkland Islands, from New York to Tokyo, from you-name-it to you-name-it," says Ristorcelli. "Using moon bounce, a ham can transmit a signal to the moon and have it reflect back to the Earth. That lets you talk from pole to pole." There are some 3 million licensed hams throughout the world, excluding only North Korea, which does not permit amateur radio operation. It can even stretch up to the International Space Station, where there are fellow ham operators on board.

At the beginning of the decade, there was a network of just more than 700,000 ham radio operators in the U.S. The network isn't just folks with a car battery, an antenna and a will to take communication into their own hands. There are ongoing responsibilities that come with being a ham operator, too. Broadcast radio gained popularity around 1900. That led to the government having a hand in the control of the electromagnetic spectrum. In 1914, Hiram Percy Maxim founded a coterie of hams called ARRL (American Radio Relay League) and successfully argued that they should be allowed to be exclusive users of the long-range bands of the electromagnetic spectrum. They still are. Ever since, the ham community has been strictly following a code of behavior to remain deserving of the bands—for example, you have to stop talking every three minutes and identify yourself every ten minutes. And

ham radio's savvy operators have provided some unexpected boons to communication in the century since ARRL's founding. Real-time battlefield location, called Blue Forces Tracking, is based on the Automated Packet Reporting System (APRS) developed by call sign WA4PRS.

Ham radio itself has developed quite a résumé in dire situations. "Ham radio isn't the only solution to the world's problems, but it is a resource," says Ristorcelli. He adds that during 9/11, it was ham operators who opened up communications when New York City's cellular and other conventional communications systems collapsed. The benefits, according to Ristorcelli—who personally helped locate a stranded victim of Hurricane Katrina via radio from California—are "that independence, resiliency, that thinking ahead."

It's a case of use it or lose it when it comes to the attendant radio skills required for when things go bad, warns Ristorcelli. "A lot of people get their technician's license because they figure this is a way to be in contact with people in an emergency. So they get a license, they go to a store and get one of those handheld radios, they put in the glove compartment of the car so that the day of the earthquake, they can call mama. But they don't know where the repeaters are and what the repeater frequencies are. They haven't established contacts."

"You can only make it effective if you plan for it in advance, and if you use it," adds Ristorcelli. "Plus, it probably has dead batteries, so it won't work anyway."



Prepper Rick Austin's Tips for Growing Hidden Grub



IMAGINE A garden you plant once. It takes up very little space and grows five times more food per square foot than a traditional garden—and it's all disguised to look like overgrown underbrush. Here's some ground rules for creating your own Secret Garden of Survival:

Opt Out of Vegetables

In a situation where there is no electricity, no refrigeration, no supermarkets, no seed stores, no fertilizers and no pesticides, it makes sense to look at people who managed to live successfully for generations without them. Studies of indigenous peoples around the world showed that they have lived primarily on perennials (plants like grapes and apple

trees that grow year after year without replanting) as opposed to annuals (such as typical grocery store vegetables like carrots and cucumbers) that have to be replanted each year.

Grow Roots

Perennials have time to put down deeper roots, which enables them to get more nutrients and reach water deeper in the soil. It also makes them less susceptible to seasonal variations in sunshine, rainfall, cold and heat than annuals.

Forego Rows

In nature, plants don't grow in rows and don't need to be cultivated, trimmed, weeded or doused with pesticides. And nature has been growing fruits, nuts, berries and herbs successfully for millions of years.

Exploit Symbiosis

When growing naturally, plants are often symbiotic. Plants grow—some taller, some shorter—in a way in which all plants get adequate sun, air and rain. They often share nutrients and natural pest control; they sometimes grow in concentric circles where the tallest plant (often a fruit or nut tree) provides shade for shade-seeking plants and creates a natural trellis for vine foods like grapes. Outside the shade ring, a layer of shrubs like blueberries and blackberries can grow. Outside of that circle of shrubs, herbs can grow—which have the added benefit of attracting insect pollinators and predatory wasps, which may feed on “bad” bugs, providing a defensive perimeter around the fruit, nuts and berries that bad bugs cross at their own peril. Finally, around the herb layer is a lower level of ground cover, which accumulates nitrogen, a natural fertilizer, and it makes available to the other plants.

TEOTWAWKI Proof

Because we are growing in three dimensions, the garden can produce five times more food in the same space as a traditional garden and is almost no work to maintain compared to gardening with annuals. In a doomsday scenario, preppers are going to have enough work to do without tilling the field. And because these plants all grow together—and in some cases are intertwined—it looks more like overgrown underbrush than a food supply, which camouflages the garden from would-be marauders.



Most people know about Bug-Out Bags, or BOBs, but what are other essential prepper terms?

SJ TEOTWAWKI is an acronym for "The End Of The World As We Know It" and it also has a pronunciation: Tee-ough-te-walk-ee. Then, there is GHB (Get-Home Bag), the INCH (I'm Never Coming Home) Bag, SHTF (S---t Hits the Fan), EMP (Electromagnetic Pulse), BOL (Bug-Out Location), BOV (Bug-Out Vehicle), SA (Situational Awareness), PD (Perimeter Defense), GOOD (Get Out Of Dodge)—the list goes on.

What are most preppers prepping for?

SJ Asking what people are preparing for is like asking a group of people to describe the color blue. Our mantra is you prepare for one, you prepare for all. It's best not to be event specific in your preparedness or you may find yourself caught off guard.

R It almost doesn't matter what the disaster is, because it is just a catalyst. If any disaster goes on long enough, the results will be the same: a lack of food, water, power and shelter for the unprepared. It is also important to understand that in today's computerized age of "just in time delivery" there are less than three days' inventory on the shelves of any grocery store.

Why is it important to prepare?

SJ We prepare because we don't want to find ourselves sandwiched in a gymnasium for shelter or waiting in line for water after a disaster. By having

the necessities, you won't have to worry about someone coming to "save" you.

What led you to adopt the preparedness lifestyle?

SJ It was an epiphany for me. The incident that got my attention was when I was almost carjacked at gunpoint by two armed men who had just robbed someone at an ATM machine and were looking for a getaway

"By having the necessities, you won't have to worry about someone coming to 'save' you."

vehicle in broad daylight. That was the day my sense of security was ripped from me. I also realized that I needed to start being accountable for myself and began researching what it really meant to be "prepared."

R I have always had a survival and preparedness mindset. I grew up in New Hampshire where you could lose power for a week at a time due to an ice storm or blizzard. So you learned to cook with wood, heat with wood and store your food out in the snow. I also lived for years in Florida, in the hurricane and lightning capital of the world, where you could lose power for weeks at a time, but in that case it was 90-plus degrees and 90 percent humidity. If you weren't prepared, you were a victim, so you learned to be prepared.

It can seem overwhelming. How do you get started?

R Learn all you can. The Internet is a great resource while it is still here. Create your own prepper library. Of course, you can't read them all now, but you will be glad that you have resources on how to fix things, grow things, preserve things and how to deal with medical issues when you need information most.

Why organize prepper camps to instruct others?

R Some might say that we could be better off if we kept quiet, hid away and didn't tell anything to anyone. But the lone wolf approach is not so easy. In a really bad disaster situation, there is too much to do and not enough hours or people to do it. So you need division of labor and extra hands. And you might say that, selfishly, we know that the more people we can teach to fend for themselves, the less we have to worry about them trying to take our stuff.

What does the ideal off-the-grid outpost look like?

R I like a rural setting, because, first of all, you have the right mindset of people who are surrounding you. Just like in any military study on defensive

positions, the strategic high ground is the best. As part of my Secret Garden of Survival food forest, I have planted natural barriers and obstacles such as blackberries, Osage orange and other thorny "green fences" around the perimeter of my property. Water on the property is also a key feature. The soil and rainfall should be enough to be able to grow crops.

What's the most useless thing people think they need in their bug out bags?

R It's not one thing, it's too many things—too much weight. Just try walking five miles with your BOB. Most people can't walk to the end of their driveway with it on. You need to have things that can serve multiple purposes.

On the flip side, what's the main thing new preppers forget to have or do?

SJ Hygiene! Infectious disease is the number one cause of death worldwide. It is imperative that we have the means to keep ourselves clean and infection free.

So what are your three must-have items for bugging out?

SJ A poncho is one of my favorite items to have in an emergency bag because it is so versatile. It can be used as a tent, for warmth and to catch water for drinking. Another is a knife. You can hunt small game, prepare food and use it for protection. A lot of people who are just getting into preparedness get caught up in buying stuff with no thought



WELL-GROUNDED

Survivor Jane exits a bunker during a media tour for the "Doomsday Castle" series for the National Geographic Channel. Her husband, Rick Austin (in camouflage), looks on.

in mind. The focus should be on basic needs of water, food, shelter, protection, warmth, communication and first-aid and go from there. Oh, and my last item: rope and/or paracord. **R** One of the most overlooked items is a hat. As they say in the cold north, "If your feet are cold, put a hat on." Also, if you are in the woods, a hat keeps the creepy-crawlies out of your hair that could bite and cause infection, and it can be used to collect and, yes, even boil water by putting heated rocks in your hat.

What's the single biggest mistake that rookies just starting out make?

SJ I always caution, "Don't buy and not try." Which is to say, don't buy all this survival gear and then shove it into your go-bags or garage.

R You can't just have gadgets and think you are going to be OK and survive anything that comes at you. What you need more than anything is practice. You need skills. Don't think you can buy seeds and then can grow a garden when you need it. That is folly.

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DOOM BOOM

According to a 2012 poll done for the National Geographic Channel, 9 out of 10 people surveyed expect a world disaster to occur in the next 25 years; 44 percent said they are ready.

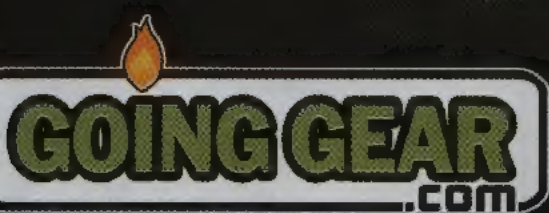


Prepping for DOOMSDAY

Survivor Jane Austin and her husband, Rick, shed light on how to be ready for TEOTWAWKI—The End Of The World As We Know It.

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